

FIG. 1

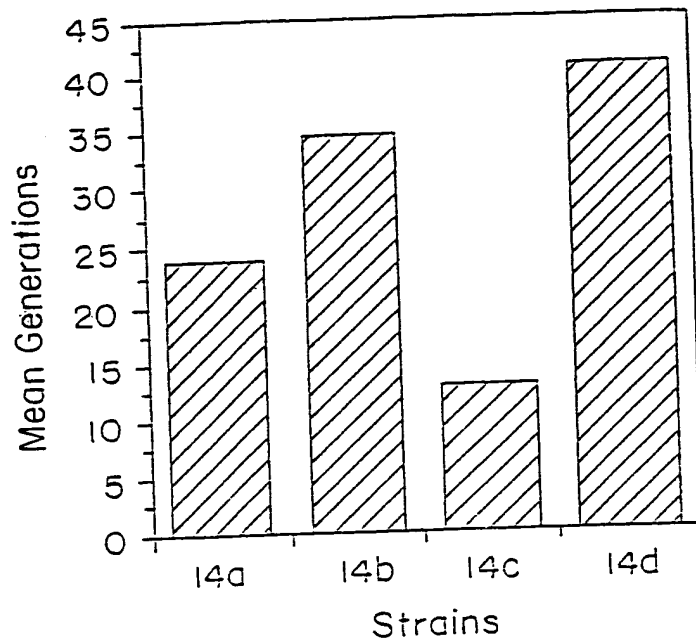


FIG. 2A

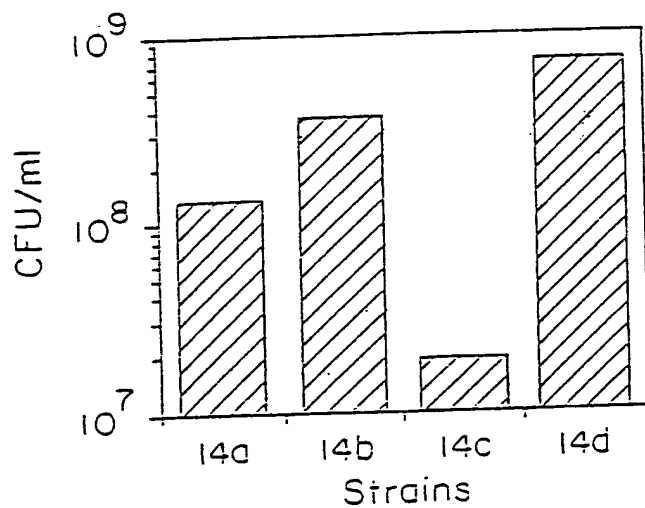


FIG. 2B

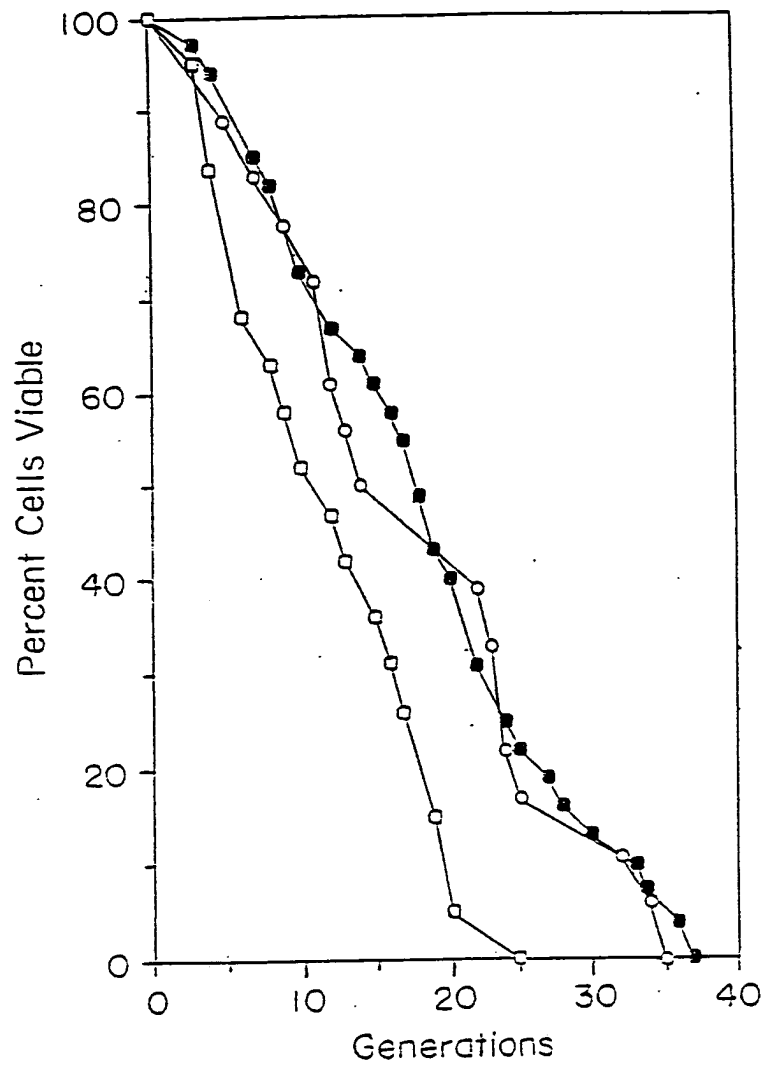


FIG. 3

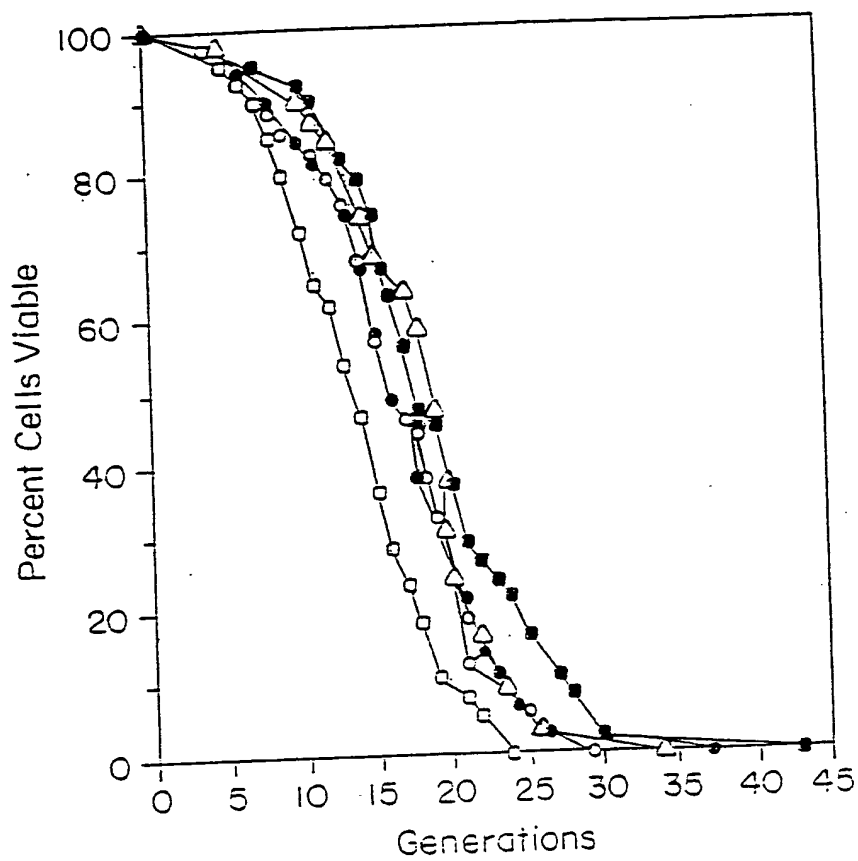


FIG. 4

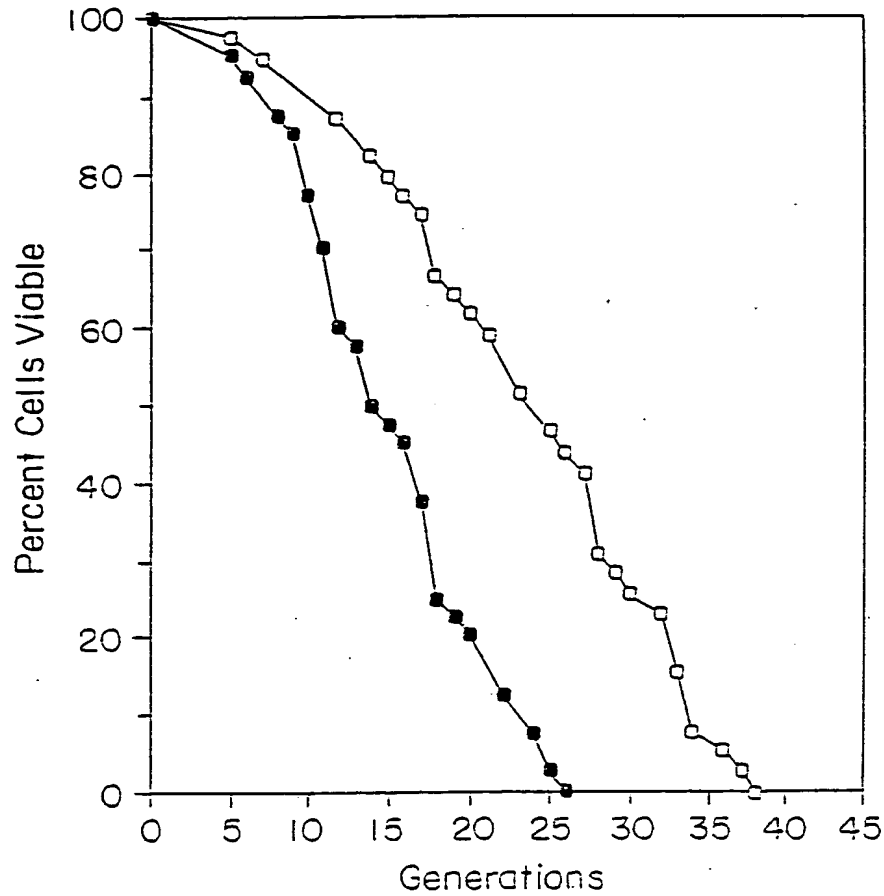


FIG. 5

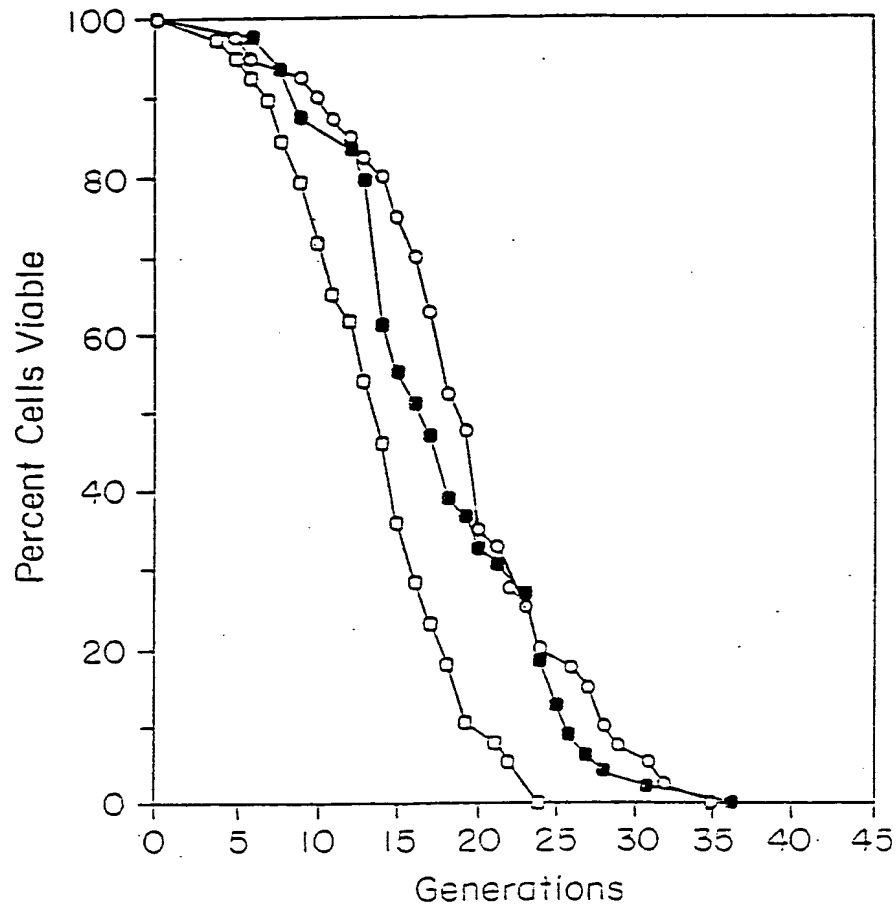


FIG. 6

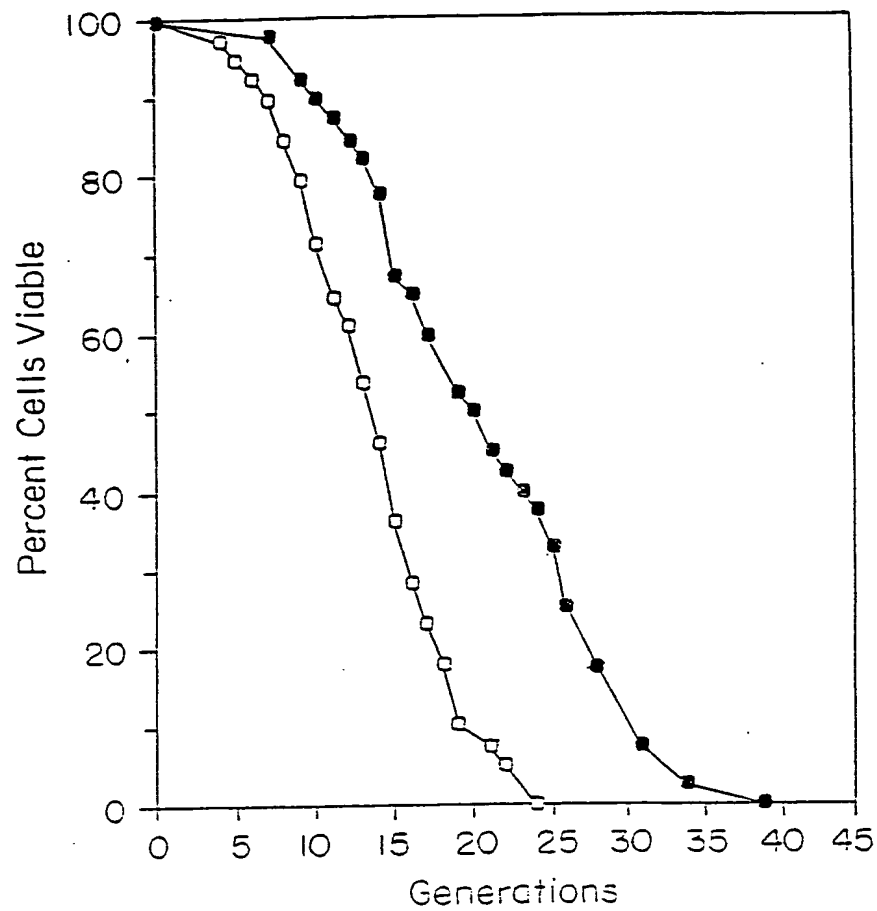


FIG. 7

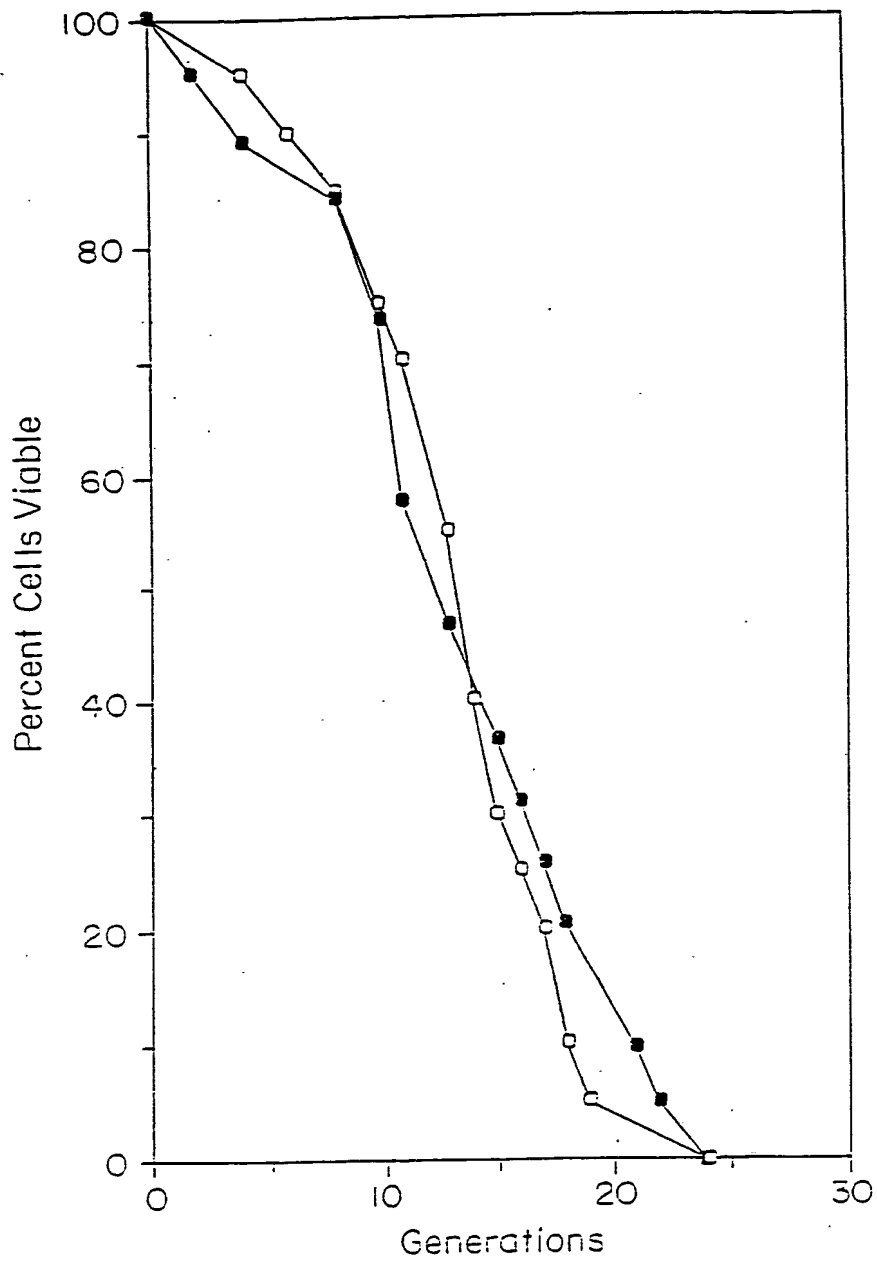


FIG. 8

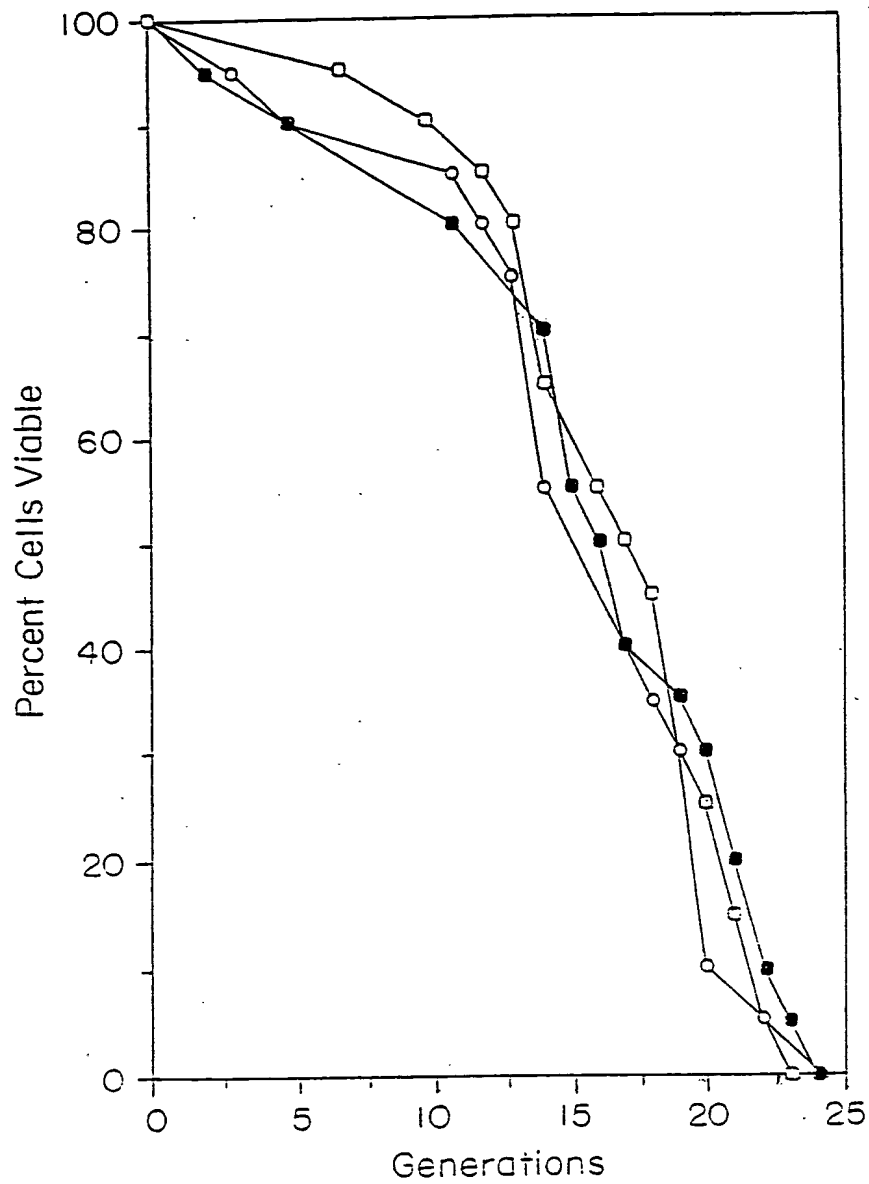


FIG. 9

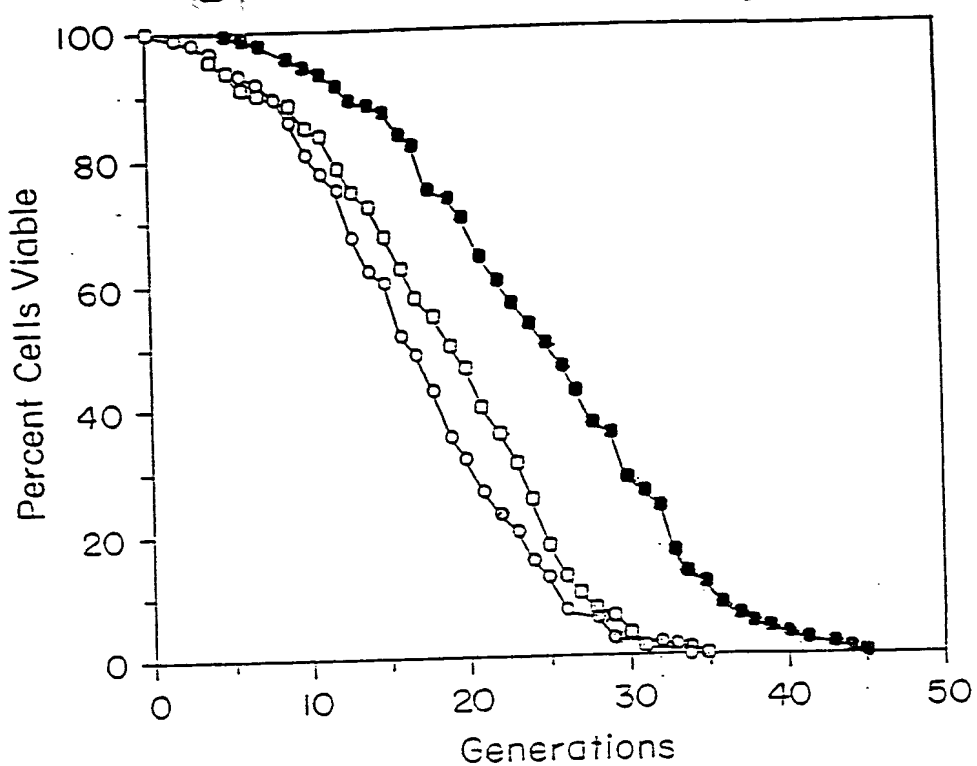


FIG. 10

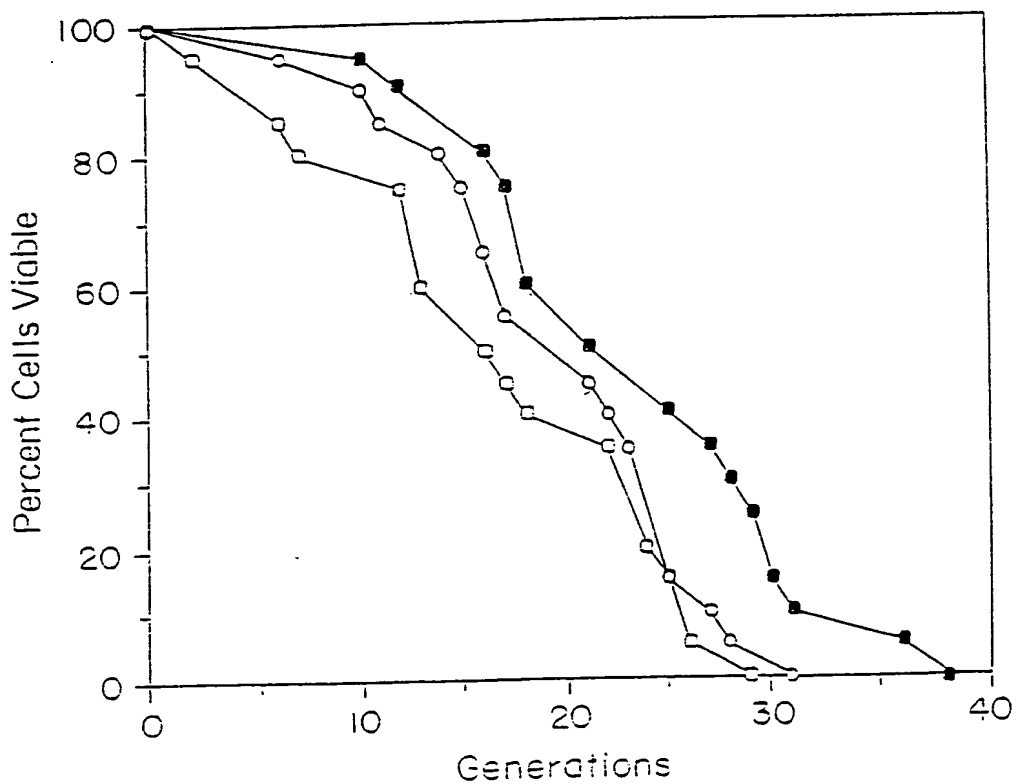


FIG. 11

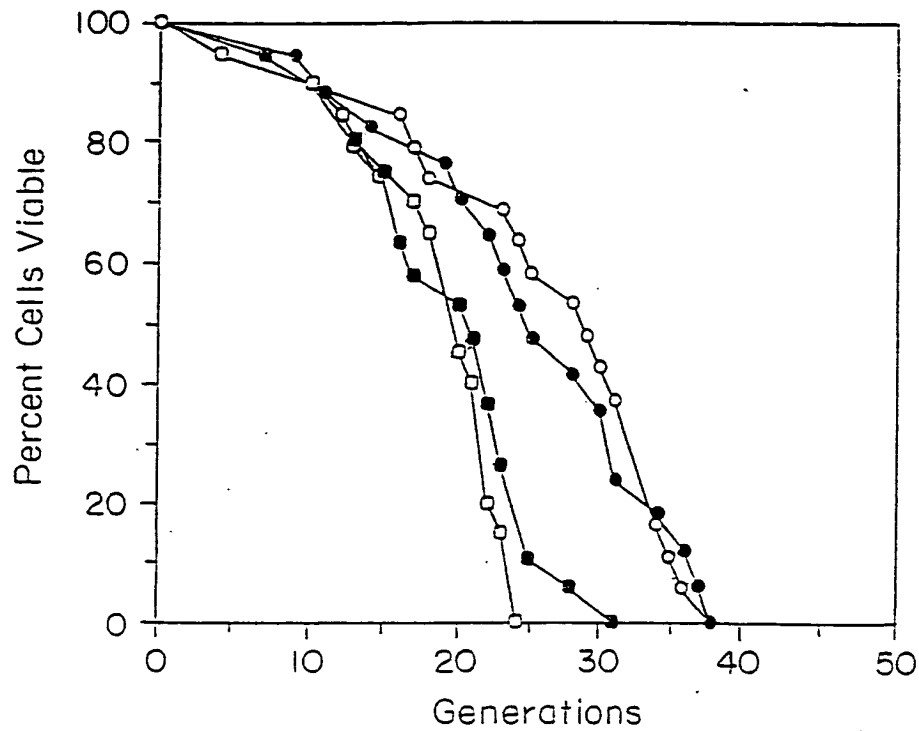


FIG. 12

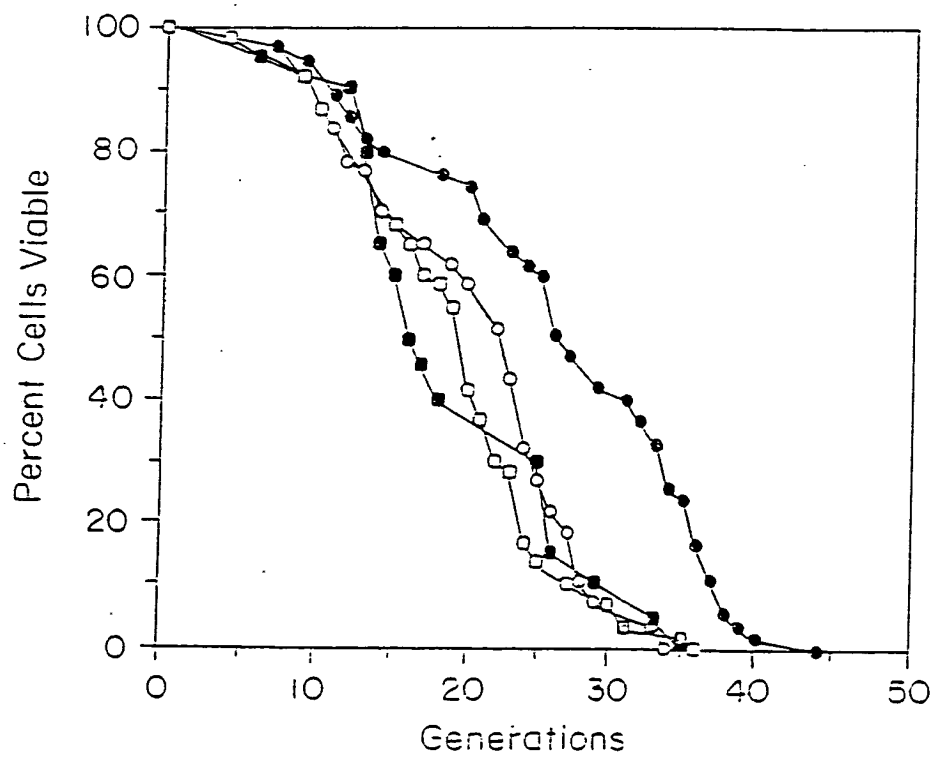


FIG. 13

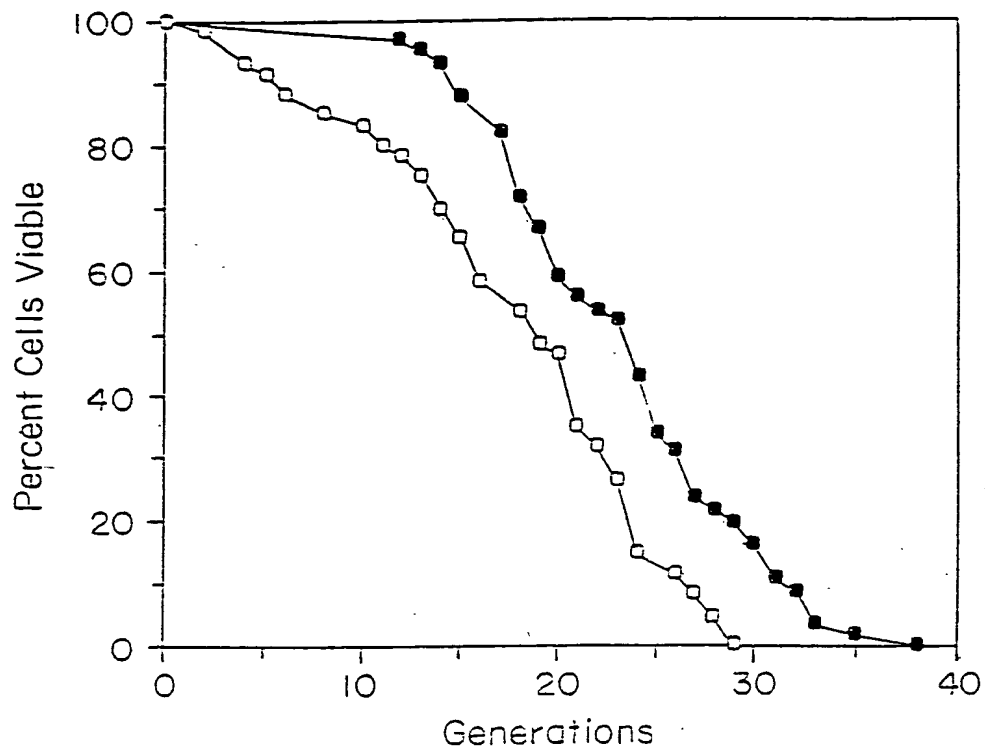


FIG. 14

FIG. 14 - 2529660

FIG. 15A

1045	TCT	TAC	GCT	TGT	TCT	CCA	GGT	TAC	GCT	AAG	ACC	CAA	TGG	CCT	TCT	GAA	CAA	CCT	TCC	GAT	GGT	AGA	TCC	GTT	GGT	1119
242	S	Y	A	C	S	P	G	Y	A	K	T	Q	W	P	S	K	Q	P	S	D	G	R	S	V	G	266
1120	GGT	TTA	TAC	TGT	AAG	AAC	GGT	AAA	TTA	TAC	CGT	TCC	AAC	ACC	GAC	ACT	AAC	AGT	TTG	TGT	GTA	GAA	GGT	CAA	GGC	1194
267	G	L	Y	C	K	N	G	K	L	Y	R	S	N	T	D	T	N	S	L	C	V	K	G	Q	G	291
1195	TCT	GCT	CAA	GCT	GTT	AAC	AAG	GTC	TCC	GGC	TCC	AAT	GCT	ATC	TGT	GGT	ACC	GAT	TAT	CCA	GGT	TCT	GAA	AAC	ATG	1269
292	S	A	Q	A	V	N	K	V	S	G	S	I	A	I	C	G	T	D	Y	P	G	S	K	N	M	316
1270	GTC	GTT	CCT	ACC	GTA	GTT	GGC	GCT	GGT	TCC	TCC	CAA	CCA	ATC	AAC	GTC	ATC	AAG	GAG	GAC	TCC	TAC	TAT	CAA	TGG	1344
317	V	V	P	T	V	V	G	A	G	S	S	Q	P	I	N	V	I	K	K	D	S	Y	Y	Q	W	341
1345	CAA	GGT	AAG	ACC	TCT	GCC	CAA	TAC	TAC	Y	Y	N	N	A	G	V	S	V	K	D	G	C	I	W	G	1419
342	Q	G	K	K	T	S	A	Q	Y	Y	A	P	V	V	I	G	A	G	Y	T	D	G	I	T	Y	366
1420	ACT	GAG	GGT	TCC	GGT	GTC	GGT	AAC	TGG	GCC	CCA	GTT	GTC	TTG	GGT	GCT	GGT	TAC	ACT	GAT	GGT	ATC	ACT	TAC	TTC	1494
367	T	K	G	S	G	V	G	N	W	A	P	V	V	I	G	A	G	Y	T	D	G	I	T	Y	L	391
1495	TCC	ATC	ATT	CCA	AAC	CCA	AAC	AAC	AAA	GAA	GCA	CCA	AAC	TTT	AAC	ATC	AAG	ATC	GTT	GCC	ACC	GAT	GGC	TCT	ACC	1569
392	S	I	I	P	N	P	N	N	K	A	A	P	N	F	N	I	K	I	V	A	T	D	G	S	T	416
1570	GTC	AAT	GGT	GCT	TGC	TCT	TAC	GAA	AAT	GGT	GTC	TAC	TCT	GGC	TCT	GAC	GGT	TGT	ACT	GTT	TCA	GTT	ACT	ACT	1644	
417	V	N	G	A	C	S	Y	K	N	G	V	Y	S	G	S	D	G	C	T	V	S	V	S	V	T	441
1645	TCT	GGT	TCT	GCT	AAC	TTT	GTC	TTT	TAC	TAG	GCC	TTT	TTT	TCC	TGAA	TAT	TGCA	AAT	AGC	TTT	TGCT	TACT	TTT	TACT	CCGTTCA	1734
442	S	G	S	A	N	F	V	P	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	451	
1735	TTT	ATG	GTT	TAT	TTT	TCA	ATT	AGT	TGC	TTT	TTT	CAC	AAT	ACA	AAA	AAA	CAC	AGT	CCT	TTG	TAC	TAT	CCC	TTT	TAT	1809
1	M	V	Y	Y	F	S	I	S	S	S	F	F	H	N	T	K	H	S	P	L	Y	Y	P	F	Y	24
1810	TTC	ATT	ATT	TTT	TCT	TTT	TTT	TTA	AGA	TAC	CAC	TAG	ATATTATCATATATAGCATATTTATATTAACAT	AAAAAGTCAAGAAAAAAA	ATG	M										1894
25	F	I	I	F	S	F	L	R	Y	H	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	1
1895	TTT	TTA	TCA	CTT	TCT	ATA	ACT	GCA	TAT	CTT	TTT	TTG	CAT	TTC	GAA	TGA	TTGC									1946
2	F	L	S	L	S	I	T	A	Y	L	F	L	H	P	E	*										17

FIG. 15B

1/1
AAG CTG TAA CGG GAT CTT CTA ACA ACA AAT AGC ATA 31/11
K L * R D I G S S N K * H N N N Q K K P A S V G
S F N T G G S S N K * H N N N Q K K P A S V G
A L T G G S S N K * H N N N Q K K P A S V G
61/21
GAT CAG CCT ATC GAC ACG CCT TTT TTA GCG GTC TAA 91/31
D Q P I D T P L A V * Q S N N L S V Y V W N
I S L Y R H A F S G L 151/51
121/41
ATT TCT ATA CTT GAC CCT ACC TTA TTT CTC GAA TAT GCC TAT AAG GAT TTT CTC GAA AGA
I S I L Y T * P Y L I S R I C L * G F S R K K
F Y T * P Y L I S R I C L * G F S R K K
181/61
AGG GCT TCG GGA AAG AGG CGC CTC AGG CAA AAA TGA GCA AAA AAA AAA AAA AGA AAA
R A S G K R G A P Q A K N E S K K K K K K K R
G L R E K E A P Q A K N E S K K K K K K K R
241/81
GAT TCG AAG ATC TAT GAA AAA TTT ATG CAG ATT CGT TGA GAG TTA TAA GGA TTT TAC TCT
D S K I Y M K N I Y A D S L 331/111
I R R S M L * K I Y A D S L 331/111
F E D L * K I Y A D S L 331/111
301/101
TTA TGG TTA TAG GTT TCA TTC TAA AAT CAA GCA TAA ATT TTG TGT TTT GTC TTC CTC TTT
L W L * Y R F H S I L K S I N F F V C V L S S S L F
Y G Y R F H S I L K S I N F F V C V L S S S L F
M V I G F I L K S I N F F V C V L S S S L F

FIG. 16A

361/121 TCC TGT CCT CTT TTT TTG CCA TCC TCT GTC GCC ATT GAA GTC GAA CTT TAT AGA TAG ATT
 S C P L F F F L C A I L C R H * A I L K S R T L * I D R I F L
 421/141 TAC TCT TGA TTC TCA CGC ATC TCA GGC CAC CTG GAC ACT GTA CAT GGT TGT GAT TGT TCT
 Y S * F S H A S Q A T P G L D T L Y M V V I V L S
 481/161 CTT TCT CAG TTA TCG AAA TTG ATC CTA GGC CAC TTA TAC TCC AAA ATC GGC TCT GCA CAC GCC
 L S Q L S Y R N * S * A Y T L I L A Y T P K S A L C T R L
 541/181 TTA TTT TGG TGT CAC TTT ACT AAC ACA TTT TTT TAT TCA ATC AGA TCA ATA ACG
 L F F C G V S L Y * H N I L A T F F L I F N Q I N N E
 601/201 AAC CAT TTC CAT CTG CCG ACT CAG CAT CGA TTT TAA CTA CGT CTA CAT CAA ATA ACT CCT
 N H I S I C R L S A S I D I L T F N Y V Y T S N N S L
 661/221 TAA TGT CTT ACA ATC ATC AGC CTC AAC TAT CTA TTA ACT CCG TCC AAT CAC TCT TGG AGC
 * C L T I I S A S T I Y * L L T P S N H S W S
 721/241 CCG TGA CCC CTC CGC CTT TGG GCC AGA TGA ATA ACA AAA GAA ACC ATC AAA AGG CTC ATT
 P * R D P S A F L G G Q Q M N N K R N H Q K A H S
 V T P P P L G G Q Q M N N K R N H Q K A H S

FIG. 16B

[illegible]

FIG. 16C

FIG. 16D

1201/401
TCA GCG CAC TAC CCC TTA GAG ATC TGG ATT ATA TCA AAC TTG CCA CTG ACC AGT TTG GCT
S A H Y P L E I W I L Y Q T C H * P V W L A
Q R T T P L R D L Y I K L A T D Q F G C

1231/411
GCC GTT TTC AAA AAT TAG AAA CCC CCA GTG AAT CCA ATA TGG TGA GAG ACT TGA
A V F F K K N * K P P V N P I W * E T *
P F S S K K I R N P Q * I Q Y G E R L D M

1261/421
R F L Q K K L E T P S E S N M V R D L M

1291/431
TGT ATG AAC AAA TTA AGC CAT TTT TCT TGG ACC TTA TTT TGG ATC CGT TCG GTA ACT ATT
C M N K L S H I F S W T L F F W I R S V * L F
V * T N * A I F L L D L I L D P F G N Y L

1321/441
Y E Q I K P F F L D L I L D P F G N Y L

1351/451
TGG TTC AAA AAC TAT GCG ATT ATT TAA CTG CCG AGC AAA AGA CAT TAT TAA TAC AAA CAA
W F K N Y A I I * L C R A K K R H Y * Y K Q
G S K T M R L F N C P R A K K D I I N T N N I

1381/461
V Q K L C D Y L T A E Q K K T L L I Q T I

1411/471
TAT ATC CAA ATG TTT TCC AAA TAT CAA TCA ATC AGT ACG GAA CTC GTT CCT TAC AGA AAA
Y I Q M F S K Y Q S I S T E L V P Y R K
I S K C F P N I N Q S V R N S F L T E N I

1471/491
Y P N V F Q I S I N Q Y G T R S L Q K I

1501/501
TTA TAG ACA CTG TCG ATA ACG AAG TTC AAA TCA TTA TTA AGG GAT TTT CCC AAG
L * T L S I T R S S N R S H Y * G I F S O E
Y R H C R * R S S Q I D L I I K G F P R

1531/511
I D T V D N E V Q I D L I I K G F S O E

1561/521
AAV TTA CTT CGA TTG AGC AAG TGG TTA CTT TGA TAA ACG ATC TTA ATG GTA ACC ATG TGA
N L L R L S K W L L * T I L M V * P C D I
I Y F D * A S G Y T L I N D L N G N H V I

FIG. 16D

1621/541
 TTC AAA AGT GTA TTT TCA AAT TCT CGC CAT CAA AAT TTG GTT TCA TCA TAG ATG CTA TTG
 F K S V Y F I F S N S A I H Q N L V S S H H I I D A I V
 S K K C I F Q I F S Q I L A P S K F G F I I S S * M L L C Y C
 Q K K I F F S K F G F I I S K F G F I I S K F G F I I S K F G F I I S K F G F I I S
 1681/561
 TAG AAC AAA ATA ATA TTA CCA TTT CTA CCC ATA AAC ATG GTT GTT GCG TAC TAC AAA
 * N K I I S H Y H I T I S T CTA CCC ATA AAC ATG GTT GTT GCG TAC TAC AAA
 R T K * Y I I I T I S T CTA CCC ATA AAC ATG GTT GTT GCG TAC TAC AAA
 E Q N N I I I T I S T CTA CCC ATA AAC ATG GTT GTT GCG TAC TAC AAA
 1741/581
 AAT TAC TAA GCG TTT GTA CTC TAC AAC AAA TTT TCA AAA TTT CTG TGA AAA TTG TGC AGT
 N Y * A F V L Y S T T N K F S K F L * K L C S
 I T K R L Y S T T N K F S K F L * K L C S
 L L S V C T L Q I F K I S V K I V Q F
 1801/601
 TCC TTC CTG GAT TAA TCA ACG ATC AGT TCG GTA ATT ATA TCA TCC AAT TTC TGT TAG ATA
 S F L D * S T I S V R * L Y I I Q F L L D I
 P S W I N Q R S D Q F G N Y I I Q F L L D I
 L P G L I N D Q F G N Y I I Q F L L D I
 1861/621
 TCA AAG AAT TGG ACT TTT ACT TAT TGG CTG AGT TAT TTA ACC GTT TAT CCA ATG AAT TAT
 S K N W T F T Y L I G * V I * P F I Q * I M C
 Q R I G L D F Y L L A E L F N R L S N E L C
 K E L D F Y L L A E L F N R L S N E L C
 1921/641
 GTC AAC TAT CTT GTT TGA AGT TCT CCT CAA ATG TTG TGG AAA AAT TCA TTA AAA AAT TAT
 V N Y L V * S S O Q M L W K N S L K N Y
 S T I L F E V L L L K C C G K I H * K I I
 Q L S C L K F S N V V E K F I K K L F
 1981/661
 TTA GAA TCA TTA CTG GAT TTA TTG TTA ATA ACA ATG GGG GTG CCT CCC AAA GGA CTG CAG
 L E S L L D L L L I T M G V P P K G L Q
 * N H Y W I Y C * Q W G G A S Q R T A V
 R I I T G F I V N N G G A S Q R T A V

FIG. 16E

2041/681 2071/691
TTG CTT CTG ATG ACG TGA TTA ATG CTT CTA TGA ACA TTC TTT TGA CTA CCA TTG ATA TAT
L L L M T * L M L L * T F F * L P L I Y
C F * * R D * C F Y E H S F D Y H * Y I
A S D D V I N A S M N I L L T T I D I F
2101/701 2131/711
TCA CAG TCA ATT TAA ATG TGC TAA TCA GGG ATA ATT TTG GTA ATT ATG CGT TAC AAA CGC
S Q S I * M C * S G I I L V I M R Y K R
H S Q F K C A N Q G * F W * L C V T N A
T V N L N V L I R D N F G N Y A L Q T L
2161/721 2191/731
TAT TAG ACG TTA AGA ATT ATT CTC CTC TGC TTG CTT ACA ACA ATA GTA ACG CAA TTG
Y * T L R I I L L C L L T T K I V T Q L
I R R * E L F S S A C L Q Q K * * R N W
L D V K N Y S P L L A Y N K N S N A I G
2221/741 2251/751
GGC AAA ACA GCT CTA GTA CAT TGA ATT ACG GTA ACT TTT GTA ACG ATT TTT CAT TGA AAA
G K T A L V H * I T V T F V T I F H * K
A K Q L * Y I E L R * L L * R F F I E N
Q N S S S T L N Y G N F C N D F S L K I
2281/761 2311/771
TTG GTA ACT TGA TTG TCC TTA CAA AAG AAT TAC TTC CAA GTA TTA AAA CTA CAT CCT ATG
L V T * L S L Q K N Y F Q V L K L H P M
W * L D C P Y K R I T S K Y * N Y I L C
G N L I V L T K E L L P S I K T T S Y A
2341/781 2371/791
CAA AGA AAA TTA AGT TGA AAG TTA AAG CTT ATG CAG AAG CCA CAG GTA TAC CAT TCA CTG
Q R K L S * K L K L M Q K P Q V Y H S L
K E N * V E S * S L C R S H R Y T I H *
K K I K L K V K A Y A E A T G I P F T D
2401/801 2431/811
ACA TAT CTC AAG TCA CTG CAA TGA GTC ATA ACA ATC TTC AAA CGA TTA ACA ACG AAA
T Y L L K S L Q * V I T I F K R L T T K
H I S S S H C N E S * Q S S N D * Q R K
I S P Q V T A M S H N N L Q T I N N E N

FIG. 16F

FIG. 16G

2881/961
 GAT TTA AGC AGC CTG GAT TTA TGA ATG AAA CCG ACA AAA TTA ATG CTA ATC ACT TCT
 D L S S L D L * M K P T K L M L I T S
 I * A A W I Y D E * N R Q N * C * S L L
 F K Q P G F M M N E T D K I N A N H F S
 2941/981
 CGC CAT ACT CTA ATG CAA ATA GTC AAA ACT TCA ATG AAT CTT TTG TGC CTC GTA TGC ANT
 R H T L M Q I V K T S M N L L C L V C N
 A I L * C K * S K L Q * I F C A S Y A I
 P Y S N A N S Q N F N E S F V P R M Q Y
 3001/1001
 ATC AAA CCG AAG GTG CAA ACT GGG ATT CAA GTT TGT CAA TGA AGT CGC AGC ATA TTG GTC
 I K R K V Q T G I Q V C Q * S R S I L V
 S N G R C K L G F K F V N E V A A Y W S
 Q T E G A N W D S S L S M K S Q H I G Q
 3061/1021
 AAG GCC CAT ATA ATC AAG TTA ATA TGA GCC GCA ACG CTA GTA TTT CCA ATA TGC CTG CCA
 K A H I I K L I * A A T L V F P I C L P
 R P I * S S * Y E P Q R * Y F Q Y A C H
 G P Y N Q V N M S R N A S I S N M P A M
 3121/1041
 TGA ATA CCG CTA GAA CAT CTG ATG AAC TTC AAT TCA CTT TGC CAT AAT ACT TTT TTT TCT
 * I P L E H L M N F N S L C H N T F F S
 E Y R * N I * T S I H F A I I L F F L
 N T A R T S D E L Q F T L P * Y F F F
 3181/1061
 TTC TTT TTC TTT TCT TCT TAC TGT ACA AAT ATT TTA CGC AGA AAT CAA AGA CAA AAG AAA
 F F F F P S Y C T N I L R R N Q R Q K K
 S F S F L L T V Q I F Y A E I K D K R K
 L F L S F L L Y K Y F T Q K S K T K E K
 3241/1081
 AAT AAA AAA TAA AAA ATA AAA AAT TCA ACT AAG CAA TGA CGT CCT ACT AAA GTC CCA AAA
 N K K * K I K N S T K Q * R P T K V P K
 I K N K K * K I Q L S N D V L L K S Q N
 * K I K N K K F N * A M T S Y * S P K I

FIG. 16H

3301/1101
 TTT GAG CCG GAA AAA AAT GGT AAA GCA AAC TAT TGC CAT CTT TAT ATT TTG TAT TCT GTT
 F E P E K N G K A N Y C H L Y I L Y S V
 L S R K K M V K Q T I A I F I C I L F
 * A G K K W * S K L L P S L Y F V F C F
 3331/1111
 3361/1121
 TCC GAA CAC GTA TCC AAA ATC CTC CCA CTG CCT TTG CAG GGT TAG CAT TGC TCC CTA CCA
 S E H V S K I L P L P L Q G * H C S L P
 P N T Y P K K S S H C L C R V S I A P Y Q
 R T R I Q N P P T A F A G L A L L P T K
 3421/1141
 AAA TGA TCT AAT TTT TTT TTG AAT CGT TTT TTG TC
 K * S N F F L N R F L
 N D L I F F * I V F C
 M I * F F F E S F F V

FIG. 16I

FIG. 17A

1/1
 GTG TCT TCC ATG GAG TGA ATT GTG ATT TGT GAA TTA TAT CTG TCC AAT ACC GTT GCC TTG
 V S S M E * I V I C E L Y L S N T V A L
 C L P W S E L * F V N Y I C P I P L P C
 V F H G V N C D L * I I S V Q Y R C L V
 61/21
 TTG GGA GCT CAG ATA GAA AAG ACA TCT TAA TTC CAG ACA GTC TAT TCT CTG TCT ATT TCT
 L G A Q I E K T S * F Q T V Y S L S I S
 W E L R * K R H L N S R Q S I L C L F L
 G S S D R K D I L I P D S L F S V Y F S
 121/41
 CTT TGT GAC TGC AAA TTT TAA TTT GTG ACG CCT TTT CTT ATT ACT CAT GTA TTT GTC ACT
 L C D C K F * F V T P F L I T H V F V T
 F V T A N F N L * R L F L L L M Y L S L
 L * L Q I L I C D A F S Y Y S C I C H S
 181/61
 CTT GAC GAT TGT TTT TTT TCT ATA TTT TTT TTG TGC TGG CGT CCT CCA GAG AAT AAA AAA
 L D D C F F S I F F L F W G P P E N K K
 L T I V F F L Y F F C S G V L Q R I K N
 * R L F F F Y I F F V L G S S R E * K I
 241/81
 TAA TGA TCA ATA TAG TAG ATA GTA TAG TTA TAT TCT TAT TCG TTG CAC CTT GTT TAA CAA
 * S I * I V * L Y S Y S L H L V * Q
 N D Q Y S R * Y S Y I L I R C T L F N K
 M I N I V D S I V I F L F V A P C L T N
 301/101
 ATC ACT CAG ACT CAA AGA GAA TAT CGG TTG GTT ATC TCT CAC CGA AGG TGA ACA GCA AAC
 I T Q T Q R E Y R L V I S L R R * T A N
 S L R L K E N I G W L S L S E G E Q Q T
 H S D S K R I S V G Y L S P K V N S K Q
 361/121
 AGT ACC TCA CGT CTT TTT TTT TTT TTT TTT TTG TTT AAA CAG AAA AAC AAC TTT
 S T S R L F F E * F F F L L K Q K K N F
 V P H V F F L N S F F F C * N R K K T F
 Y L T S F F * I V F F F V E T E K K L S

FIG. 17A

421/141
 CTT CCG TAT ATT ACA TTG TAC ATT ATT TTT ATT G'PA TTT TAG TTT CCA ACG TTA GGA TTT
 L P Y I T L Y I I F I V F * F P T L G F
 F R I L H C T L F L L Y F S F Q R * D L
 S V Y Y I V H Y F Y C I L V S N V R I *
 481/161
 GAG CCG TCA TTA ATA TTA TTC GTT TTT GTA CAC TAT TCC AGA CGA TTT ATT TTT AGT ACA
 E P S L I L F V F V H Y S R R F I F S T
 S R H * Y Y S F L Y T I P D D L F L V H
 A V I N I I R F C T L F Q T I Y F * Y T
 541/181
 CTT AAA ATT CCT GTT GAT ATT GTC CAC TAG TTC TCT TTT CAT ATT TTA TTT TCG CTT ATT
 L K I P V D I V H * F S F H I L F S L I
 L K F L I L I S T S S L F I F Y F R L F
 * N S C * Y C P L V L F S Y F I F A Y S
 601/201
 CTT TAG GTT CTT TTA AGA GTC TCT GTT CAT TTT CCG TTC TTA CTG TTT CTT TGT CCT CGA
 L * V L L R V S V H F P F L L F L C P R
 F R F F * E S L F I F R S Y C F F V L D
 L G S F K S L C S F S V L T V S L S S I
 661/221
 TAT CTT TTA AGA AAG AGA GAA CTA AGC GCT GTA ACA TTT TTA AGT GGA CCT ACG TTA TGT
 Y L L R K R E L S A V T F L S G P T L C
 I F * E R E N * A L * H F * V D L R Y V
 S F K K E R T K R C N I F K W T Y V M S
 721/241
 CTA CAA AAG GTT TGA AAG AAG AAA TCG ATG ATG TAC CAT CAG TAG ACC CTG TCG TTT CAG
 L Q K V * K K K S M Y H Q * T L S F Q
 Y K R F E R R N R * C T I S R P C R F R
 T K G L K E E I D D V P S V D P V S E

FIG. 17B

781/261
 AAA CAG TCA ATT CTG CTT TAG AGC AGT TGC AAC TAG ATG ATC CAG AGG AAA AGC CCA CCT
 K Q S I L L * S S C N * M I Q R K T P P
 N S Q F C F R A V A T R * S R G K R H L
 T V N S A L E Q L Q L D D P E E N A T S
 811/271
 841/281
 CTA ATG CAT TTG CGA ATA AAG TTT CTC AAG ATT CTC AAT TCG CTA ATG GCC CTC CGT CGC
 L M H L R I K F L K I L N S L M A L R R
 * C I C E * S F S R F S I R * W P S V A
 N A F A N K V S Q D S Q F A N G P P S Q
 901/301
 931/311
 AAA TGT TTC CAC ATC CAC AAA TGA TGG GTG GAA TGG GCT TCA TGC CCT ACT CTC AAA TGA
 K C F H I H K * W V E W A S C P T L K *
 N V S T S T N D G W N G L H A L L S N D
 M F P H P Q M M G G M G F M P Y S Q M M
 961/321
 991/331
 TGC AGG TTC CAC ATA ATC CTT GTC CAT TTT TTC CGC CCC CTG ATT TTA ATG ATC CAA CAG
 C R F L I I L V H F F R P L I L M I Q Q
 A G S S * S L S I F S A P * F * S N S
 Q V P H N P C P F P P P D F N D P T A
 1021/341
 1051/351
 CAC CAT TGA GTA GCT CGC CCT TGA ATG CAG GCG GTC CAC CAA TGT TAT TCA AGA ATG ACT
 H H * V A R P * M Q A V H Q C Y S R M T
 T I E * L A L E C R R S T N V I Q E * L
 P L S S S P L N A G G P P M L F K N D S
 1081/361
 1111/371
 CAC TTC CAT TTC AAA TGC TGT TGT CTT CGG GTG CTG CGG TAG CAA CTC AAG GTG GAC AAA ATC
 H F H F K C C L R V L R * Q L K V D K I
 T S I S N A V F G C C G S N S R W T K S
 L P F Q M L S S G A A V A T Q G G Q N L
 1141/381
 1171/391
 TAA ACC CAT TGA TAA ATG ACA ATT CAA TGA AGG TAT TGC CAA TCG CAT CGG CTG ATC CGT
 * T H * M T I Q * R Y C Q S H R L I R
 K P I D K * Q F N E G I A N R I G * S V
 N P L I N D N S M K V L P I A S A D P L

FIG. 17C

FIG. 17D

1201/401 1231/411
 TAT GGA CTC ATT CAA ACG TAC CAG GAT CAG CAT CTG TAG CCA TTG AAG AAA CCA CCG CTA
 Y G L I Q T Y Q D Q H L * P L K K P P L
 M D S F K R T R I S I C S H * R N H R Y
 W T H S N V P G S A S V A I E E T T A T
 1261/421 1291/431
 CTC TAC AAG AAA GCC TAC CAT CTA AGG GCA GGG AGT CTA ATA ATA AGG CTA GTT CGT TCA
 L Y K K A Y H L R A G S L I I R L V R S
 S T R K K P T I * G Q G V * * G * F V Q
 L Q E S L P S K G R E S N N K A S S F R
 1321/441 1351/451
 GAA GAC AAA CTT TTC ATG CTT TAT CAC CAA CTG ACC TTA TCA ATG CCG CCA ACA ATG TAA
 E D K L F H L Y H Q L T L S M R P T M *
 K T N F S C F I T N * P Y Q C G Q Q C N
 R Q T F H A L S P T D L I N A A N N V T
 1381/461 1411/471
 CCT TGT CAA AGG ACT TCC AAT CTG ACA TGC AGA ATT TTT CTA AGG CTA AGA AAC CGT CTG
 P C Q R T S N L T C R I F L R L R N R L
 L V K G L P I * H A E F F * G * E T V C
 L S K K D F Q S D M Q N F S K A K K P S V
 1441/481 1471/491
 TAG GAG CTA ACA ATA CTG CAA AAA CCA GAA CTC AAT CCA TAT CTT TTG ATA ATA CTC CCT
 * E L T I L Q K P E L N P Y L L I I L P
 R S * Q Y C K N Q N S I H I F * * Y S L
 G A N N T A K T R T Q S I S F D N T P S
 1501/501 1531/511
 CCT CAA CGT CAT TTA TAC CCC CAA CCA ATA GTG TTT CTG AGA AAT TAT CCG ATT TCA AAA
 P Q R H L Y P Q P I V F L R N Y P I S K
 L N V I Y T P N Q * C F * E I I R F Q N
 S T S F I P P T N S V S E K L S D F K I
 1561/521 1591/531
 TAG AAA CCT CGA AGG AGG ATT TGA TTA ATA AAA CTG CAC CTA AAA AAG AGA GTC CTA
 * K P R R I * L I K L H Q L K K R V L
 R N L E G G F D * * N C T S * K R E S Y
 E T S K E D L I N K T A P A K K E S P T

FIG. 17D

1621/541
CAA CTT ATG GTG CAG CAT ATC CAT ATG GGG GAC CTT TAC TTC AAC CAA ATC CTA TTA TGC
Q L M V Q H I H G D L Y F N Q I L L C
N L W C S I S I W G T F T S T K S Y Y A
T Y G A A Y P Y G G P L L Q P N P I M P
1681/561
CAG GCC ACC CAC ATA ATA TAT CCT CCC CTA TCT ATG GTA TTA GAT CAC CTT TTC CTA ATT
Q A T H I I Y P P L S M V L D H L F L I
R P P T * Y I I L P Y L W Y * I T F S * F
G H P H N I S S P I Y G I R S P F P N S
1741/581
CTT ATG AAA TGG GCG CGC AAT TTC AAC CTT TCT CTC CGA TTTT TAA ATC CTA CGA GTC ATT
L M K W A R N F N L S L R F * I L R V I
L * N G R A I S T F L S D F K S Y E S F
Y E M G A Q F Q P F S P I L N P T S H S
1801/601
CAC TAA ATG CAA ATT CTC CAA TTC CTC TAA CCC AAT CGC CAA TTC ATC TTG CAC CAG TTT
H * M Q I L Q F L * P N R Q F I L H Q F
T K C K F S N S S N P I A N S S C T S F
L N A N S P I P L T Q S P I H L A P V L
1861/621
TAA ACC CTA GTT CAA ATT CTG TTG CCT TTT CAG ATA TGA AGA ATG ATG GTG GTA AGC CCA
* T L V Q I L L P F Q I * R M M V V S P
K P * F K F C C L F R Y E E * W W * A H
N P S S N S V A F S D M K N D G G K P T
1921/641
CCA CCG ATA ACG ACA AGG CGG GTC CAA ATG TTA GGA TGG ATT TAA TAA ATC CTA ATC TTG
P P I T T R R V Q M L G W I * I L I L
H R * R Q G G S K C * D G F N K S * S W
T D N D K A G P N V R M D L I N P N L G
1981/661
GGC CAT CAA TGC AAC CTT TCC ACA TAT TAC CTC CCC AGC AAA ACA CCC CQC CTC CTC CCT
G H Q C N L S T Y Y L P S K T P P L L P
A I N A T F P H I T S P A K H P P S S L
P S M Q P F F H I L P P Q Q N T P P P W

FIG. 17E

FIG. 17F

2461/821
 AAA AGC AGT TGG ATA TTC TCG GCA GTA AGG CGG CGG ACC GAA TTT TTG AAG AAA CTA AGG
 K S S W I F S A V R R R T E F L K K L R
 K A V G Y S R Q * G G G P N F * R N * G
 K Q L D I L G S K A A D R I F E E T K D
 2491/831
 2521/841
 2551/851
 ATT ATA CGG TTG AAT TGA TGA CTG AAT CAT TCG GTA ATT ATT TGA TCC AGA AGC TAT TGG
 I I R L N * * L I H S V I I * S R S Y W
 L Y G * I D D * F I R * L F D P E A I G
 Y T V E L M T D S F G N Y L I Q K L L E
 2611/871
 2581/861
 AAG AGG TTA CCA CAG AAC AAA GAA TCG TAC TCA CAA AAA TAT CTT CCC CTC ATT TTG TCG
 K R L P Q N K E S Y S Q K Y L P L I L S
 R G Y H R T K N R T H K N I F P S F C R
 E V T T E Q R I V L T K I S S P H F V E
 2671/891
 2641/881
 AAA TTT CCT TAA ACC CTC ATG GTA CTA GGG CAT TAC AAA AAC TCA TTG AAT GCA TCA AAA
 K F P * T L M V L G H Y K N S L N A S K
 N F L K P S W Y * G I T K T H * M H Q N
 I S L N P H G T R A L Q K L I E C I K T
 2731/911
 2701/901
 CAG ATG AAG AAG CAC AGA TTG TTG TTG ATT CTT TAC GCC CTT ATA CTG TCC AGT TGA GTA
 Q M K K H R L L L I L Y A L I L S S * V
 R * R S T D C C * F F T P L Y C P V E *
 D E E A Q I V V D S L R P Y T V Q L S K
 2791/931
 2761/921
 AGG ATT TAA ATG GTA ATC ATG TTA TTC AAA AAT GTT TGC AAA GGT TGA AGC CTG AAA ACT
 R I * N V I M L F K N V C K G * S L K T
 G F K W * S C Y S K M F A K V E A * K L
 D L N G N H V I Q K C L Q R L K P E N F
 2851/951
 2821/941
 TCC AGT TTA TCT TTG ACG CAA TCT CTG ATA GCT GTA TTG ATA TTG CTA CTC ATA GAC ACG
 S S L S L T Q S L I A V L I L L I L I D T
 P V Y L * R N L * * L Y * Y C Y S * T R
 Q F I F D A I S D S C I D I A T H R H G

FIG. 17G

2881/961 2911/971
 GGT GTT GCG TTT TGC AAC GTT GTC TAG ATC ATG GGA CTA CAG AAC NAT GTG ACA ATC TGT
 G V A F C N V V * I M G L Q N N V T I C
 V L R F A T L S R S W D Y R T M * Q S V
 C C V L Q R C L D H G T T E Q C D N L C
 2941/981 2971/991
 GTG ATA AGT TGC TAG CCC TTG TTG ATA AAT TAA CTT TGG ATC CAT TTG GCA ACT ATG TGG
 V I S C * P L L I N * L W I H L A T M W
 * * V A S P C * * I N F G S I W Q L C G
 D K L L A L V D K L T L D P F G N Y V V
 3001/1001 3031/1011
 TGC AAT ATA TAA TTA CCA AAG AGG CTG AGA ACA AAT ATG AAT ATA CGC ATA AAA TTG
 C H I * L P K R L R R T N M I I R I K L
 A I Y N Y Q R G * E E Q I * L Y A * N C
 Q Y I I T K E A E K N K Y D Y T H K I V
 3061/1021 3091/1031
 TCC ACC TGT TGA AAC CAA GAG CCA TCG AAC TTT CTA TCC ATA AAT TTG GAT CAA ATG TGA
 S T C * N Q E P S N F L S I N L D Q M *
 P P V E T K S H R T F Y P * I W I K C D
 H L L K P R A I E L S I H K F G S N V I
 3121/1041 3151/1051
 TTG AAA AAA TCT TGA AGA CAG CTA TTG TTT CGG AGC CAA TGA TTC TCG AAA TTT TAA ATA
 I K K S * R Q L L F R S Q * F W K F * I
 * K N L E D S Y C F G A N D S G N F K *
 E K I L K T A I V S E P M I L E I L N N
 3181/1061 3211/1071
 ATG GTG GCG AGA CGG GTA TTC AAT CAT TGT TGA ATG ATA GCT ACG GAA ATT ACG TTT TAC
 M V A R R V F N H C * M I A T E I T F Y
 W W R D G Y S I I V E * * L R K L R F T
 G G E T G I Q S L L N D S Y G N Y V L Q
 3241/1081 3271/1091
 AGA CAG CAT TAG ACA TTTT CTC ATA AGC AAA ATG ACT ATC TCT ATA AAA GAC TAT CAG AGA
 R Q H * T F L I S K M T I S I K D Y Q R
 D S I R H F S * A K * L S L * K T I R D
 T A L D I S H K Q N D Y L Y K R L S E I

FIG. 17H

3301/1101
 TTG TGG CGC CTT TAC TGG TGG GCC CCA TAA GAA ATA CAC CTC ATG GTA AAA GAA TCA TCG
 L W R L Y W A P * E I H L M V K E S S
 C G A F T G G P H K K Y T S W * K N H R
 V A P L L V G P I R N T P H G K R I I G
 3331/1111
 3361/1121
 GAA TGT TAC ATT TAG ATT CAT AGT TGA TAC ATA TAT CCT CAG TTT AGC TTT TTT TTT TAC GTT
 E C Y I * I H S * Y I Y P Q F S F F Y V
 N V T F R F I V D T Y I L S L A F F T L
 M L H L D S * L I H I S S V * L F L R *
 3391/1131
 3421/1141
 AGC CTC ATA TAA TAT CTT TTG TAC AAT ACT AAA ATA CAT CAT TTT TTT TTT CGT TGA GGA
 S L I * Y L L Y N T K I H H F F F R * G
 A S Y N I F C T I L K Y I I F F F V E D
 P H I I S F V Q Y * N T S F F S L R I
 3451/1151
 3481/1161
 TCA AAT GAA TAT CCA AAG CAA AAA AAA TAG GAA TTT TCA CTT TAT GGT ATA CTG GTA AAT
 S N E Y P K Q K K * E F S L Y G I L V N
 Q M N I Q S K K N R N F H F M V Y W * I
 K * I S K A K K I G I F T L W Y T G K *
 3511/1171
 3541/1181
 AGT GTT GAA GAA ATA AGA GAA GGA GAT CGC CCT AGA AAA CAG AAT GTT CTT ATT TAA ATA
 S V E I R E G D R P R K Q N V L I * I
 V L K K * E K E I A L E N R M F L F K *
 C * R N K R R R S P * K T E C S Y L N K
 3571/1191
 3601/1201
 AGT AAA CTC AAA AGA AAA AAA GGA AGG AAG TTT TTG AGA ACT TTT ATC TAT ACA AAC
 S K L K R K K K G R K F L R T F I Y T N
 V N S K K K K E G S F * E L L S I Q T
 * T Q K K K R K E V F E N F Y L Y K R
 3631/1211
 3661/1221
 GTA TAC GTT TAA CTA TCT GGA TAA ACG TCG CAC AGG ATA CTG TAG AGG TCC TCA AGA
 V Y V * I, S G * T S L H R I L * R S S R
 Y T F N Y L D K R R S T G Y C R G P Q D
 I R L T I W I N V A P Q D T V E V L K I

FIG. 171

3721/1241
 TCA CCG TTA TTA ACA AAT TCA TCT AGT GTC CCC AAA TTA AAA CTA GTT GCA GAA AAA TTG
 S P L L T N S S S V P K L K L V A E K L
 H R Y * Q I H L V S P N * N * L Q K N C
 T V I N K F I * C P Q I K T S C R K I V
 3751/1251
 3781/1261
 TTA CTG TTG TTG TTA ATA TTG TTA TTT TTA TTG TTG TTG TTG ATT TCA
 L L L L L I L I L I L F L L L L L L I S
 Y C C C C * Y C * Y C F Y C C C C * F H
 T V V V V N I V N I V F I V V V D F I
 3811/1271
 3841/1281
 TTT GTG TTC ATA AAT GGT ACT TGT ACT GAA GTG GGT ATT TGC TGC TGA CCA TTG ATT GGT
 F V F I N G T C T E V G I C C * A L I G
 L C S * M V L V L K W V F A A E H * L V
 C V H K W Y L Y * S G Y L L L S I D W F
 3871/1291
 3901/1301
 TTA TTA GAT TGG ACT TGC GAA TTA TTT TGC CCA TTT GTT GGT TGC GCG TAA TCG GGA TTG
 L L D W T C E L F C P F V G C A * S G L
 Y * I G L A N Y F A H L L V A R N R D *
 I R L D L R I I L P I C W L R V I G I D
 3931/1311
 3961/1321
 ATC ATA TCA GAC ACG GAT AAT GAC CTA AAT GAA GGC AAT T
 I I S D T D N D L N E G N
 S Y Q T R I M T * M K A I
 H I R H G * * P K * R Q
 3991/1331

FIG. 17J

1/1
 gaa gat cgg ggg gct gaa atc cat ctt cat acc gct ccg ccc gtg ttg gty gaa tga
 E D R G A E I H L H P T A P P V L V E *
 K I G G L K S I F I L P L R P C W W N E
 R S G G * N P S S Y R S A R V G G M S
 31/11
 61/21
 gcg ttg cat gtg tct tga aga gaa aag cag tgc ttt ggc agg act ctt tca gcc ccc acc
 A L H V S * R E K Q C F G R T L S A P T
 R C M C L E E K S S A L A G L F Q P P L
 V A C V L K R K A V L W Q D S F S P H L
 151/51
 121/41
 tga aac atc acc ctc aag aac cag cta atc oca aca tgc ctg ttg ttt tga cat ctg gaa
 * N I T L K N Q L I P T C L L F * H L E
 E T S P S R T S * S Q H A C C F D I W N
 K H H P Q E P A N P N M P V V L T S G T
 211/71
 181/61
 cag ggt cgc aag cgc agc cac aac cag ctg caa atc agg ctc ttg cag ctg gga ctc act
 Q G R K R S H N Q L Q I R L L Q L G L T
 R V A S A A T T S C K S G S C S W D S L
 G S Q A Q P Q P A A N Q A L A A G T H S
 271/91
 241/81
 cca gcc ctg tcc cag gat cta tag gag ttg cag gcc gtt ccc agg acg acg cta tgg tgg
 P A L S Q D L * E L Q A V P R T T L W W
 Q P C P R I Y R S C R P F P G R R Y G G
 S P V P P G S I G V A G R S Q D A M V D
 331/111
 301/101
 act act tct ttc aga ggc agc atg gtg agc agc ttg ggg gag gag gaa gtg gag gag gcg
 T T S F R G S M V S S L G E E V E E A
 L L L S E A A W * A A W G R R K W R R R
 Y F F Q R Q H G E Q L G G G S G G G
 391/131
 361/121
 gct ata ata gca aac atc gat ggc cta ctg ggg ata aca ttc atg cag aac atc agg
 A I I A N I D G L L G I T F M Q N I R
 L * * Q T S M A Y W G * H S C R T S G
 Y N N S K H R W P T G D N I H A E H Q V

FIG. 18A

421/141
tgc gtt cca tgg atg aac tga atc atg att ttc aag cac ttg ctc tgg agg gaa gag cga
C V P W M N * I M I F K H L L W R E E R
A F H G * T E S * F S S T C S G G K S D
R S M D E L N H D F Q A L A L E G R A M

451/151
481/161
tgg gag agc agc tct tgc cag gta aaa agt ttt ggg aaa cag atg aat cca gca aag atg
W E S S S C Q V K S F G K Q M N P A K M
G R A A L A R * K V L G N R * I Q Q R W
G E Q L L P G K K F W E T D E S S K D G

511/171
541/181
gac caa aag gaa tat tcc tgg gtg atc aat ggc gag aca gtg cct ggg gaa cat cag atc
D Q K E Y S W V I N G E T V P G E H Q I
T K R N I P G * S M A R Q C L G N I R S
P K G I F L G D Q W R D S A W G T S D H

571/191
601/201
att cag ttt ccc ago caa tca tgg tgc aga gaa gac ctg gto aga gtt tcc atg tga aca
I Q F P S Q S W C R E D L V R V S M * T
F S F P A N H G A E K T W S E F P C E Q
S V S Q P I M V Q R R P G Q S F H V N S

631/211
661/221
gtg agg tca att ctg tac tgt ccc cac gat cgg aga gtg ggg gac tag gcg tta gca tgg
V R S I L Y C P H D R R V G D * A L A W
* G Q F C T V P T I G E W G T R R * H G
E V N S V L S P R S E S G G L G V S M V

691/231
721/241
tgg agt atg tgt tga gct cat ccc cgg gcg att cct gtc taa gaa aag gag gat ttg gcc
W S M C * A H P R A I P V * E K E D L A
G V C V E L I P G R F L S K K R R I W P
E Y V L S S S P G D S C L R K G G F G P

751/251

FIG. 18B

781/261
caa ggg atg cag aca gtg atg aaa acg aca agg gtg aaa aga aca agg gta cgt ttg
Q G M Q T V M K T T K V K R R T R V R L
K G C R Q * * K R Q R * K E E Q G Y V *
R D A D S D E N D K G E K K N K G T F D

811/271
841/281
atg gag ata agc tag gag att tga agg agg gtg atg tga tgg aca aga cca atg gtt
M E I S * E I * R R R V M * W T R P M V
W R * A R R F E G G * C D G Q D Q W F
G D K L G D L K E E G D V M D K T N G L

871/291
901/301
tac cag tgc aga atg gga ttg atg cag acg tca aag att tta gcc gta ccc ctg gta att
Y Q C R M G L M Q T S K I L A V P L V I
T S A E W D * C R R Q R F * P Y P W * L
P V Q N G I D A D V K D F S R T P G N C

931/311
961/321
gcc aga act ctg cta atg aag tgg ato ttc tgg gtc caa acc aga atg gtt ctg agg gct
A R T L L M K W I F W V Q T R M V L R A
P E L C * * S G S S G S K P E W F * G L
Q N S A N E V D L L G P N Q N G S E G L

1021/341
1051/351
tag ccc agc tga cca gca cca atg gtg cca ago ctg tgg agg att tct cca aca tgg agt
* P S * P A P M V P S L W R I S P T W S
S P A D Q H Q W C Q A C G G F L Q H G V
A Q L T S T N G A K P V E D F S N M E S

1081/361
1111/371
ccc aga gtg toc cct tgg acc cca tgg acc atg tgg gca tgg ago ctc ttc agt ttg att
P R V S P W T P W N M W A W S L F S L I
P E C P L G P H G T C G H G A S S V * L
Q S V P L D P M E H V G M E P L Q F D Y

1141/381
1171/391
att cag gca cgc agg tac ctg tgg act cag cag cag caa ctg tgg gaa ttt ttg act aca
I Q A R R Y L W T Q Q Q L W D F L T T
F R H A G T C G L S S S N C G T F * L Q
S G T Q V P V D S A A A T V G L F D Y N

FIG. 18C

1201/401
att ctc aac aac agc tgt tcc aaa gac cta atg cgc ttg ctg tcc agc agt tga cag ctg
I L N N S C S K D L M R L L S S S * Q L
F S T T A V P K T * C A C C P A V D S C
S Q Q Q L F Q R P N A L A V Q Q L T A A
1261/421
ctc agc agc agt atg cac tgg cag ctg ctc atc agc cgc aca tgg gtt tag cto ccg
L S S S S M H W Q L L I S R T S V * L P
S A A A V C T G S C S S A A H R F S S R
Q Q Q Q Y A L A A A H Q P H I G L A P A
1321/441
ctg cgt ttg tcc cca atc cat aca tca tca gcg ctg cto ccc cag gga cgg acc cct aca
L R L S P I H T S S A L L P Q G R T P T
C V C P Q S I H H Q R C S P R D G P L H
A F V P N P Y I I S A A P P G T D P Y T
1381/461
cag ctg gat tgg ctg cag cag cga cac tag gcc cag ctg tgg tcc cto acc agt att atg
Q L D W L Q Q R H * A Q L W S L T S I M
S W I G C S S D T R P S C G P S P V L W
A G L A A A T L G P A V P H Q Y Y G
1441/481
gag tta ctc cct ggg gag gat acc ctg cca gtc ttt tcc agc agc aag ctg ccg ctg ccg
E L L P G E S T L P V F S S S K L P L P
S Y S L G S L P C Q Q S F P A A S C R C R
V T P W G V Y P A S L F Q Q A A A A
1501/501
ctg cag caa cta att cag cta atc aac aga cca ccc cag agt cto agc aag gac agc agc
L Q Q L I Q L I N R P P H R L S K D S S
C S N * F S * S T D H P T G S A R T A A
A A T N S A N Q Q T T P Q A Q Q Q Q Q
1561/521
agg ttc tcc gty gag gag cca gcc aac gtc ctt tga ccc caa acc aga acc agc agc gao
R F S V E E P A N V L * P Q T R T S R D
G S P W R S Q P T S F D P K P E P A G T
V L R G G A S Q R P L T P N Q N Q Q G Q

FIG. 18D

1621/541
 agc aaa cgg ato ccc ttg tgg cag ctg cag ctg att ctg ccc ttg cat ttg gac aag
 S K R I P L W Q L Q Q * I L P L H L D K
 A N G S P C G S C S S E F C P C I W T R
 Q T D P L V A A A V N S A L A F G Q G

1651/551
 1681/561
 gtc tgg cag gca tgc cag gtt atc cgg tgt tgg ctg ctg att act atg acc aaa
 V W Q Q A C Q V I R C W L L L L T M T K
 S G S R H A R L S G V G S C C L L * P N
 L A A G M P G Y P V L A P A A Y Y D Q T

1711/571
 1741/581
 ctg gtc ccc ttg tag tga atg cag gcg cga gaa atg gtc ttg gag ctg tto gac ttg
 L V P L * M Q A R E M V L E L L F D L
 W C P C S E C R R E K W S W S S C S T C
 G A L V V N A G A R N G L G A P V R L V

1801/601
 1831/611
 tag ctg ccc cag tca tta gtt cct cag ctg caa aag cag ctg ttg cag cag cag
 * L L P Q S S L V P Q L H K Q L L Q Q P
 S S C P S H H * F L S C T S S C C S S R
 A P A P V I I S S A A Q A A V A A A

1861/621
 1891/631
 cag ott cag caa atg gag cag ctg gtc ttg ctg gaa caa atg gac cat tto gcc
 Q L Q Q M E Q L V V L L E Q Q M D H F A
 S F S K W S S W S C W N N K W T I S P
 A S A N G A A G G L A G T T N G P F R P

1921/641
 1951/651
 ctt tag gaa cac agc agc ctg agc ccc agc agc agc cca ata aca acc tgg cat
 L * E H S S L S P S P S S S P I T T W H
 F R N T A A S A P A P A A A Q * Q P G I
 L G T Q Q P Q P Q Q Q Q P N N N L A S

1981/661
 2011/671
 cca gtt ctt tct acg gca aca act ctg tga aca gca att cag aga gca gct ccc tct tct
 P V L S T A T L * T A I H R A' A P S S
 Q F F L R Q Q L S E Q Q F T E Q L P L L
 S S F Y G N N S L N S N S Q S S L F S

FIG. 18E

2041/681
 ccc agg gct ctg ccc agc ctg cca aca cat cot tgg gat tcg gaa gta gca gtt ctc tag
 p r a l p s i p t h p w d s e v a v l s
 p g l c p a c q h i l g i r k * q f s r
 q g s a q p a n t s l g f g s s s l g
 2101/701
 2131/711
 gcg cca ccc tgg gat ccg ccc ttg gag ggt ttg gaa cag cag ttg caa act cca aca ctg
 a p p w d p p l e g l e q q l q t p t l
 r h p g i r p p w r v w n s s c k l q h w
 a t l g s a l g g f g t a v a n s n t g
 2161/721
 2191/731
 gca gtg gct ccc gcc gtg act ccc tga ctg gca gca gtg acc ttt ata aga gga cat cga
 a v a p a v t p * l a a v t f i r g h r
 q w l p p * l p d w q q * p l * e d i e
 s g s r r d s l t g s s d l y k r t s s
 2221/741
 2251/751
 gca gct tga ccc cca ttg gac aca gtt ttt ata acg gcc tta gct ttt cct cct cto ctg
 a a * p p l d t v f i t a l a f p l l
 q l d p h w t q f l * r p * l f l l s w
 s l t p i g h s f y n g l s f s s p g
 2281/761
 2311/771
 gac ccg tgg gca tgc ctc tcc cta gtc agg gac cag gac att cac aga cac cto ott
 d p w a c l s l v r d q d i h r h l l
 t r g h a s p * s g t r t f t d t s f
 p v g m p l p s q g p g h s q t p p p s
 2341/781
 2371/791
 ccc tct ctt cac atg gat cct ctt caa gct taa acc tgg gag gac tca cga atg gca gtg
 p s l h m d p l q a * t w e d s r m a v
 p l f t w i l f k l k p g r t h e w q w
 l s s h g s s s l n l g g l t n g s g
 2401/801
 2431/811
 gaa gat aca tct ctg ctc cag gcg ctg aag cca agt acc gca gtg caa gca gcg cct
 e d t s l l l q a l k p s t a v q a a p
 k i h l c c s r r * s q v p q c k q r l
 r y i s a a p g a e a k y r s a s a s

FIG. 18F

FIG. 18G

2881/961
 ttg agt tta ttc ctt cag acc agc aga atg aga tgg ttc ggg aac tag atg gcc atg tot
 L S L F L Q T S R M R W F G N * M A M S
 * V Y S F R P A E * D G S G T R W P C L
 E F I P S D Q Q N E M V R E L D G H V L

2911/971
 2941/981
 tga agt gtg tga aag atc aga atg gca atc acg tgg ttc aga aat gca ttg aat gtg tac
 * S V * K I R M A I T W F R N A L N V Y
 E V C E R S E W Q S R G S E M H * M C T
 K C V K D Q N G N H V V Q K C I E C V Q

2971/991
 3001/1001
 agc ccc agt ctt tgc aat tta tca tog atg atg cgt tta agc gac agg tat ttg cct tat cca
 S P S L C N L S M R L R D R Y L P Y P
 A P V F A I Y H R C V * G T G I C L I H
 P Q S L Q F I I D A F K G Q V F A L S T

3031/1011
 3061/1021
 cac atc ctt atg gct gcc gag tga tto aga gaa tcc tgg ago act gtc tcc ctg acc aga
 H I L M A A E * F R E S W S T V S L T R
 T S L W L P S D S E N P G A L S P * P D
 H P Y G C R V I Q R I L E H C L P D Q T

3121/1041
 3151/1051
 cac tcc cta ttt tag agg agc ttc acc agc aca cag agc agc ttg tac agg atc aat atg
 H S L F * R S F T S T Q S S L Y R I N M
 T P Y F R G A S P A H R A A C T G S I W
 L P I L E E L H Q H T E Q L V Q D Q Y G

3181/1061
 3211/1071
 gaa att atg taa tcc aac atg tac tgg ago acg gtc gtc ctg agg ata aaa gca aaa ttg
 E I M * S N M Y W S T V V L R I K A K L
 K L C N P T C T G A R S S * G * K Q N C
 N Y V I Q H V L E H G R P E D K S K I V

3241/1081
 3271/1091
 tag cag aaa tcc gag gca atg tac ttg tat tga gtc agc aca aat ttg' caa gca atg ttg
 * Q K S E A M Y L Y * V S T N L Q A M L
 S R N P R Q C T C I E S A Q I C K Q C C
 A E I R G N V L V L S Q H K F A S N V V

FIG. 18H

3301/1101
 tgg aga agt gtg tta ctg acg cct cac gta cgg agc gcg ctg tgc tca tgc atg agg tgt
 W R S V L L T P H V R S A L C S S M R C
 G E V C Y S R L T Y G A R C A H R * G V
 E K C V T H A S R T E R A V L I D E V C
 3331/1111
 3361/1121
 gca cca tga acg gtc ccc aca gtg cct tat aca cca tga tga agg acc agt atg cca
 A P * T T V P T V P Y T P * * R T S M P
 H H E R R S P Q C L I H H D E G P V C Q
 T M N D G P H S A L Y T M M K D Q Y A N
 3421/1141
 3451/1151
 act acg tgg tcc aga aga tga ttg acg tgg cgg agc cag gcc agc gga aga tgc tca tgc
 T T W S R R * L T W R S Q A S G R S S C
 L R G P E D D * R G G A R P A E D R H A
 Y V V Q K M I D V A E P G Q R K I V M H
 3481/1161
 3511/1171
 ata aga tcc gcc ccc aca tgc cca ctg gta agt gta agt gca agc aca ttc tgg
 I R S G P T S Q L F V S T P M A S T F W
 * D P A P H R N S S * V H L W Q A H S G
 K I R P H I A T L R K Y T Y G K H I L A
 3541/1181
 3571/1191
 cca agc tgg aga agt act aca tga aga acg gtg ttg act tag gcc cca tct gtg gcc ccc
 P S W R S T T * R T V L T * G P S V A P
 Q A G E V L H E E R C * L R A H L W P P
 K L E K Y Y M K N G V D L G P I C G P P
 3601/1201
 3631/1211
 cta atg gta tca tct gag gca gtg tca ccc got gtt ccc tca ttc cgg ctg acc tca ctg
 L M V S S E A V S P A V P S F P L T S L
 * W Y H L R Q C H P L F P H S R * P H W
 N G I I * G S V T R C S L I P A D L T G
 3661/1221
 3691/1231
 gcc cac tgg caa atc caa cca gca acc aga aat gtt cta gtg tag agt ctg aga cgg gca
 A H W Q I Q P A T R N V L V * S L R R A
 P T G K S N Q Q P E M F * C R V * D G Q
 P L A N P T S N Q K C S S V E S E T G K

3721/1241 3751/1251
 agt ggt tgc tcc agg att act ccc tcc tcc aaa gga atc aaa tcc acg agt gga aaa
 S G C S R I T P S S K K G I K S T S G K
 V V A P G L L P P K K E S N P R V E K
 W L L Q D Y S L L Q K R N Q I H E W K S

3781/1261 3811/1271
 gcc ttt gta aat tta att tta cac ata aca tgt act att ttt ttt aat tga ota att
 A F V N L I L L H I T C T I F F N * L I
 P L * I * F Y Y T * H V L F F L I D * L
 L C K F N F I T H N M Y Y F F * L T N C

3841/1281 3871/1291
 gcc ctg ctg ttt tac tgg tgt ata gga tac ttg tac ata ggt aac caa tgt aca tgg gag
 A L L F Y W C I G Y L Y I G N Q C T W E
 P C C F T G V * D T C T * V T N V H G R
 P A V L L V Y R I L V H R * P M Y M G G

3901/1301 3931/1311
 gcc aca tat ttt gtt cac tgt tgt atc tat att tca cat gtg gaa act ttc agg gtg gtt
 A T Y F V H C C I Y I S H V E T F R V V
 P H I L F T V V S I F H M W K L S G W L
 H I F C S L L Y L Y F T C G N F Q G G W

3961/1321 3991/1331
 ggt tta aca aaa aaa agc ttt aaa aaa aga aaa gga aaa ggt ttt tag otc
 G L T K K K S F K K K R K G K G F * L
 V * Q K K K A L K K E K E K V F S S
 F N K K K K L * K K K R K R F L A H

4021/1341 4051/1351
 att tgc ctg gcc ggc aag ttt tgc aaa tag ctc ttc tcc acc tcc tca ttt tag taa aaa
 I C L A G K F C K * L F P T S S F * K
 F A W P A S F A N S S S P P P H F S K K
 L P G R Q V L Q I A L P H L I L V K N

4081/1361 4111/1371
 aca aac aaa aac aaa acc tga gaa gtt tga att gta gtt aaa tga, bcc caa act ggc
 T N K N K K T * E V * I V V K * P Q T G
 Q T K K T K K P E K F E L * L N D P K L A
 K Q K Q K N L R S L N C S * M T P N W H

FIG. 18J

FIG. 18K

F05010 25232300

4561/1521
 ttt tga ttg tac aat tgt aca ttt gta tac ctg taa tgt aaa tgt gga gaa gtt tga atc
 F * L Y N C T F V Y L * C K C G E V * I
 F D C T I V H L Y T C N V N V E K F E S
 L I V Q L Y I C I P V M * M W R S L N Q
 4621/1541
 aac ata aag aag ttt ttt ggt aag aaa aga tta ggc cct gtg cat tca gtg tat
 N I N T F F G K K R E L A S P V H S V Y
 T * T R F L V R K E N * P A L C I Q C I
 H K H V F W * E K R I S Q P C A F S V Y
 4681/1561
 att ctc acc ttt tat ggt cgt agc ata tag tgt tgt ata ttg taa att gta att tca acc
 I L T F Y G R S I * C C I L * I V I S T
 F S P F F M V V A Y S V V Y C K L * F Q P
 S H L L W S * H I V L Y I V N C N F N Q
 4741/1581
 aga agt aaa ttt ttt tgt ttt gaa gga ata aat gtt ctt tat aca gcc tag tta atg ttt
 R S K F F C F E G I N V L Y T A * L M F
 E V N F F V L K E * M F F I Q P S * C L
 K * I F L F * R N K C S L Y S L V N V *
 4801/1601
 aaa aag aaa ata gct tgg ttt tat ttg tca tot agt ctc aag tat agc gag att ott
 K K K K I A W F Y L S S S L K Y S E I L
 K R K K * L G F I C H L V S S I A R F F
 K E K N S L V L F V I * S Q V * R D S F
 4861/1621
 tct aaa tgt tat tca aga ttg agt tct cac tag tgt ttt ttt aat cct aaa aaa gta atg
 S K C Y S R L S S H * C F F N P K K V M
 L N V I Q D * V L T S V F L I L K K * C
 * M L F K I E F S L V F F * S * K S N V
 4921/1641
 ttt tga ttt tgt gac agt caa aag gac gtg caa aag tot agc ctt gcc cga gct ttc ctt
 F * F C D S Q K D V Q K S S L A R A F L
 F D F V T V K R T C K S L A L P E L S L
 L I L * Q S K G R A K V * P C P S F P Y

FIG. 18L

4981/1661
aca atc aga gcc cct cto acc ttg taa agt gtg aat cgc cct tcc ctt ttg tac aga aga
T I R A P L T L * S V N R P S L L Y R R
Q S E P L S P C K V * I A L P F C T E D
N Q S P S H L V K C E S P F P F V Q K M

5011/1671
5041/1681
tga act gta ttt tgc att ttg tct act tgt aag tga atg taa cat act gtc aat ttt cct
* T V F C I L S T C K * M * H T V N F P
E L Y F A F C L L V S E C N I L S I F L
N C I L H F V Y L * V N V T Y C Q F S L

5101/1701
5131/1711
tgt ttg aat ata gaa ttg taa cac ttg taa cgc ttg tgc att tcc aga gcc ttg tgt ata ttt
C L N I E L * H Y T V Y I S R A L C I F
V * I * N C N T T R C T F P E P C V Y F
F E Y R I V T L H G V H F Q S L V Y I S

5161/1721
5191/1731
cca atg aac ttt ttt gca ago aca ctt gta acc ata tgt gta taa tta aca aac ctg tgt
P M N F F A S T L V T I C V * L T N L C
Q * T F L Q A H L * P Y V Y N * Q T C V
N E L F C K H T C N H M C I I N K P V Y

5221/1741
5251/1751
atg ctt atg cct ggg caa cta ttt ttt gta act ctt gtg tag att gtc tct aaa caa tgt
M L M P G Q L F F V T L V * I V S K Q C
C L C L G N Y F L * L L C R L S L N N V
A Y A W A T I F C N S C V D C L * T M C

5281/1761
gtg atc ttt att ttg aaa aat aca gaa ctt tgg aat ctg
V I F I L K N T E L W N L
* S L F * K I Q N F G I
D L Y F E K Y R T L E S

5311/1771

FIG. 18M

1/1
 CGA AGT TAA AGG GAA AAA GCA ATT CAC AGG AAA GAG TAC AAA GAC AGC ACA AGA AAA AAA
 G S * R E K A I H R K E Y K D S T R K K
 F V K G K K Q F T G K S T K T A Q E K N
 K I K G K S N S Q E R V Q R Q H K K K T
 31/11
 61/21
 CAG ATT TCA TAA AAA TAG TGA TTC TGG TTC TGC AAA GAC ATT TCC AAC AAG GAA AGT TGC
 Q I S * K * * F W F F K D I S N K E S C
 R P H K N S D S G S S K T F P T R K V A
 D P I K I V I L V L Q R H F Q Q G K L L
 91/31
 121/41
 TAA AGA AGG TGG ACC TAA AGT CAC ATC TAG GAA CTT TGA GAA AAG TAT CAC AAA ACT TGG
 * R R W T * S H I * E L * E K Y H K T W
 K E G G P K V T S R N F E K S I T K L G
 K K V D L K S H L G T L R K K V S Q N L G
 151/51
 181/61
 GAA AAA GGG TGT AAA GCA GTT CAA GAA TAA GCA GCA AGG GGA CAA ATC ACC AAA GAA CAA
 E K G C K A V Q E * A A R G Q I T K E Q
 K K G V K Q F K N K Q Q G D K S P K N K
 K R V * S S R I S S K G T N H Q R T N
 211/71
 241/81
 ATT CCA GCC GGC AAA TAA ATT CAA CAA GAA GAG AAA ATT CCA GCC AGA TGG TAG AAG CGA
 I P A G K * I Q Q E E K F P A R W * K R
 F Q P A N K F N K K R K F Q P D G R S D
 S S R Q I N S T R R E N S S Q M V E A M
 271/91

FIG. 19A

301/101
 TGA ATC AGC AGC CAA GAA GCC CAA ATG GGA TGA CTT CAA AAA GAA GAA AGA ACT GAA
 * I S S Q E A Q M' G * L Q K E E E R T E
 E S A A K K P K W D D F K K K K E L K
 H Q Q P R S P N G M T S K R R K N * S
 331/111
 361/121
 GCA AAG CAG ACA ACT CAG TGA TAA AAC CAA CTA TGA CAT TGT TGT TCG GGC AAA GCA GAT
 A K Q T T Q * * N Q L * H C C S G K A D
 Q S R Q L S D K T N Y D I V V R A K Q -M C
 K A D N S V I K P T M T L L F G Q S R C
 391/131
 421/141
 GTG GGA GAT TTT AAG AAG AAA AGA CTG TGA CAA AGA AAA AAG AGT AAA GTT AAT GAG TGA
 V G D F K K K R L * Q R K K S K V N E *
 W E I L R R K D C D K E K R V K L M S D' I
 G R F * E E K T V T K K K E * S * * V I
 451/151
 481/161
 TTT GCA GAA GTT GAT TCA AGG GAA AAT TAA AAC TAT TGC ATT TGC ACA CGA TTC AAC TCG
 F A E V D S R E N * N Y C I C T R F N S
 L Q K L I Q G K I K T I A F A H D S T R
 C R S * F K G K L K L L H L H T I Q L V
 511/171

FIG. 19B

541/181 571/191
 TGT GAT CCA GTG TTA CAT TCA GTA TGG TAA TGA AGA ACA GAG AAA ACA GGC TTT TGA AGA
 C D P V L H S V W * * R T E K T G F * R
 V I Q C Y I Q Y G N E E Q R K Q A F E E
 * S S V T F S M V M K N R E N R L K N
 601/201 631/211
 ATT GCG AGA TGA TTT GGT TGA GTT AAG TAA AGC CAA ATA TTC GAG AAA TAT TGT TAA GAA
 I A R * F G * V K * S Q I F E K Y C * E
 L R D D L V E L S * V K A K Y S R N I V K K
 C E M I W L S * V K P N I R E I L R N
 661/221 691/231
 ATT TCT CAT GTA TGG AAG TAA ACC ACA GAT TGC AGA GAT ATT CAG AAG TTT TAA AGG CCA
 I S H V W K * T T D C R D N Q K F * R P
 P L M Y G S K P Q I A E I I R S F K G H
 F S C M E V N H R L Q R * S E V L K A T
 721/241 751/251
 CGT GAG GAA GAT GCT GCG GCA TGC GGA AGC ATC AGC CAT CGT GGA GTA CGC ATA CAA TGA
 R E D A A A C G S I S H R G V R I Q *
 V R K M L R H A E A S A I V E Y A Y N D
 * G R C C G M R K H Q P S W S T H T M T

FIG. 19C

781/261
 CAA AGC CAT TTT GGA GCA GAG GAA CAT GGT GAC GGA AGA GCT CTA TGG GAA CAC ATT TCA
 Q S H I G A E H A D G R A L W E H I S
 K A I L E Q R N M L T E L Y G N T F Q
 K P P W S R G T C * R K S S M G T H F S
 811/271
 841/281
 GCT TTA CAA CTC AGC AGA TCA CCG APC TCT GGA CAA AGT GTT AGA GGT ACA GCC AGA AAA
 A L Q V S R S P N S G Q S V R G T A R K
 L Y K S A D H R T L D K V L E V Q P E K
 P T S Q Q I T E L W T K C * R Y S Q K N
 901/301
 ATT AGA ACT TAT TAT GGA TGA AAT GAA ACA GAT TCT AAC TCC AAT GGC CCA AAA GGA AGC
 I R T Y Y G * H E T D S N S H G P K G S
 L E L I M D E M K Q I L T P H A Q K E A
 * H L L W M K * N R F * L Q W P K R K L
 961/321
 TGT GAT TAA GCA CTC ATT GGT GCA TAA AGT ATT CTT GGA CTT TTT TAC CTA TGC ACC CCC
 C D * A L I G A * S I L G L F Y L C T P
 V I K H S L V H K V F L D F F T Y A P P
 * L S T H W C I K Y S W T F L P H P P
 1021/341
 CAA ACT CAG ATC AGA AAT GAT TGA AGC CAT CCG CGA AGC GGT GGT CTA CCT GGC ACA CAC
 Q T Q I R N D * S H P R S G G L P G T H
 K L R S E M I E A I R E A V V Y L A H T
 H S D Q K * L K P S A K R W S T W H T H

FIG. 19D

1001/361
ACA CGA TGG CGC CAG AGT GGC CAT GCA CTG CCT GTG GGA TGG CAC GCC CAA GGA CAG GAA
T R W R Q S G H A L P V A W H A Q G Q E
H D G A R V A M H C L W H G T P K D R K
T M A P E W P C T A C G M A R P R T G K
1111/371
1141/381
ACT GAT TGT GAA AAC AAT GAA GAC TTA TGT TGA AAA GGT GGC TAA TGG CCA ATA CTC CCA
S D C E N H E D L C * K G G * W P I L P
V I V K T M K T Y V E K V A N G Q Y S H
* L * K Q * R L M L K R W L M A N T P I
1201/401
TTT GGT TTT ACT GGC GGC AAT TGA TTG TAT TGA TGA TAC TAA GCT TGT GAA GCA GAT AAT
F G F T G G I * L Y * * Y * A C E A D N
L V L A A F D C I D D T K L V K Q I I S
W F Y W R H L I V L M I L S L * S R * S
1261/421
CAT ATC AGA AAT TAT CAG TTC ATT GCC TAG CAT AGT AAA TGA CAA ATA TGG AAG GAA GGT
H I R H Y Q F I A * H S K * Q I W K E G
I S E I I S S L P S I V N D K Y G R K V S
Y Q K L S V H C L A * M T N M E G R S
1321/441
CCT ATT GTA CTT ACT AAG CCC CAG AGA TCC TGC ACA TAC AGT ACG AGA AAT CAT TGA AGT
P I V L T K P Q R S C T Y S T R N H * S
L L Y L L S P R D P A H T V R E I I E V
Y C T Y * A P E I L H I Q Y E K S L K F

FIG. 19E

1381/461
 TCT GCA AAA AGG AGA TGG AAA TGC ACA CAG TAA GAA AGA TAC AGA GGT CCG CAG ACG GGA
 S A K R R W K C T Q * E R Y R G P Q T G
 L Q K G D G N A H S K K D T E V R R R E
 C K K E M H T V R K I Q R S A D G S
 1441/481
 GGT CCT AGA ATC CAT TTC TCC AGC TTT GTT AAG CTA CCT GCA AGA ACA CCG CCA AGA AGT
 A P R I H F S S F V K L P A R T R P R S
 L L E S I S P A L L S Y L Q E H A Q E V
 S * N P F L Q L C * A T C K N T P K K W
 1501/501
 GGT GCT AGA TAA GTC TGC GTG TGT GTT GGT GTC TGA CAT TCT GGG ATC TGC CAC TGG AGA
 G A R * V C V C V L V S D I L G S A T G D
 V L D K S A C V L V C W C L T F W D L P L E T
 C * I S L R V C W C L T F W D L P L E T
 1561/521
 CGT TCA GCC TAC CAT GAA TGC CAT CGC CAG CTT GGC AGC AAC AGG ACT GCA TCC TGG TGG
 R S A Y H E C H R Q L G S N R T A S W W
 V Q P T M N A I A S L A A T G L H P G G
 F S L P * M P S P A W Q Q Q D C I L V A

FIG. 19F

1621/541
CAA CGA CGG AGA GCT TCA CAT TGC AGA ACA TCC TGC AGG ACA TCT AGT TCT GAA GTG GTT
Q G R A S H C R T S C R T S S S E V V
K D G E L H I A E H P A G H L V L K W L
R T E S F T L Q N I L Q D I * F * S G *

1651/551
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1681/561
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1711/571
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1741/581
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1771/591
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1801/601
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1831/611
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1861/621
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

1891/631
AAT AGA GCA AGA TAA AAA GAT GAA AGA AGA TGG GAG AGA AGG TTG TTT TGC AAA AAC ACT
H R A R * K D E R K E N G R E G C F A K T L
I E Q D K K K M K R E K V V L Q K H L
* S K I K R * K K M G E K V V L Q K H L

FIG. 19C

1921/641
 TCT ACT TGA AAA ACT GAG CAC ATA GGT GGA AAG AGT TAA GAG CAA GAT GGA ATG ATT TTT
 S T * K T E H I G G K S * E Q D G M I F
 L L E K L S T * V E R V K S K M E * F F
 Y L K N * A H R W K E L R A R W N D F F
 1981/661
 TCT GTT CTC TGT TCT TCT TCC CAA TGC AGA AAA GAA GGG GTA GGG TCC ACC ATA CTG GTA
 S V L C S V S Q C R K E G V G S T I L V
 L F S V L F P N A E K K G * G P P Y W *
 C S L F C F P M Q K R R G R V H T G N
 2041/681
 ATT GGG GTA CTC TGT ATA TGT TCT TCT TCT TAT ACG AAT CTA TTT ATA TAA ATT GTT
 I G V L C I C V S S L Y T N L F I * I V
 L G Y S V Y V F L L C I R I Y L Y K L F
 W G T L Y M C F F V Y E S I Y I N C F
 2101/701
 TTT TTA AAT GGT
 F I H G
 F * M
 F K W

FIG. 19H

1 GGATCCCTCTGTGAGGCCGATT ATG CAG GCC TAG ACCGCACGTGACCA CTTCGAGAGCAAGTTGCCTCGGAGTTTCTCTGCCCGAGGAAAAGA 95
 1 M Q A *
 96 A ATG GAG GCA ATT TAC TTA ATA TGG TAT GAG AGG ATC TTT TGA CGGCAATAG ATG CGC CAT CTC CGA GAA AAA ATC 172
 1 M E A I Y L I W Y E R I F * M R H L R E K I 8
 173 TAG ACAATTAACAGCGGACAAATTAACCTAAAGAGGATAGAGATCGAGCAAAAAATTTTAAAT ATG GGG TCA GTG GCG ATA TTA TAC TAT 262
 9 M G S V A I L Y Y 9
 263 AGG AGT TAA AGAGTAAGTTGAGTGTAAAGGTGGTAGAATT ATG ATT GAA CTC CGA AAC TAA GCGCCGATT ATG GGT GGC AAA GCG 346
 10 R S * M I E L R N * M G G K A 5
 347 GAC AGC TTT TGA TATATAATCGATCGCTCTCGTAGTTGATATCCTCTCTCTGCTATCTTTTCCCTGTATATAGTAT ATG TGT ACA TAC 435
 6 D S F * M C T Y 4
 436 AGA TAC GAA TAT ACC TCA GTT AGT TTG TTT TAA CATTAAATATTCAACAGTTGCCAGTAGCAAAAAGAAATATATCCATTTTCGAGC 524
 5 R Y E Y T S V S L F * 15
 525 TTITTCGTCTCATTTACTGATATCCAACTAACAGTCTCTCATAGACGGTACCTTACTTCTTTAATATTAAATACTAGTATAGTCGCACATACTTAAC 624
 625 TCGTCTCTCTCTACACATA ATG AAA ATT TCC GCA GCT TTA ATA TTG TCT TCC CTT TCT TCT GTC GCA TTT TCT GCC CCT 704
 1 M K I S A A L I L S S L S S V A F S A P 20
 705 GCA CCT GCT CCA GCG GAC AGT CAT CAT GAA GAT CAT CAC AAA GAT GAA CCA GCG GTT GTC ACT GTC ACT CAA 779
 21 A P A P A D S H E D H K D E K P A V V T V T Q 45
 780 TAC ATA GAT TCC AAT GCC GCT ACT AGT ACT GTA GAA TCT GCT GCT ACT ACC ACT ACA TTG TCC TCA TCT GAG AAG 845
 46 Y I D S N A A T S T V E S A A T T T T T T L S S S E K 70
 855 GAT ACC TCT GAA CAG AAG CGT GAT GGC GGA TTC CAA GAT GGT ACT GTC AAA TGT TCG GAC TTC CCT TCT GTA AAC 929
 71 D T S E Q K R D G G R D G T V K C S D F P S V N 95
 930 GGT ATA GTT TCC TTG GAC TGG CTA GGA TTT GGT GGA TGG GCC TCT GTC ATG GAT GCC AAC ACT TCG TCC 1004
 96 G I V S L D W L G F G W A S V M D M D A N T S S 120
 1005 GAA TGT AAG GAT GGC TAC TAC TGT TCT TAT GCA TGT GAA CCT GGA ATG TCA AAG ACT CAA TGG CCT TCT GAC CAA 1079
 121 E C K D G Y Y C S Y A C E P G M S K T Q W P S D Q 1456
 1080 CCA AGC GAT GGT AAA TCT GTT GGT GGT CTT TAT TGT AAA AAT GGT TAC TTG TAC CGT ACC AAC ACT GAT ACC AGC 1154
 146 P S D G K S V G G L Y C K N G Y L Y R T N T D T S 170
 1155 GAT TTA TGT TCT ACG GAT GAA ACA TCT GCT AAG GCC ATT AAC AAA AAG TCT GAC TCC ATT GCT CTA TGT AGG ACG 1229
 171 D L C S T D E T S A K A I N K K S D S I I A L C R T 195
 1230 GAT TAC CCA GGA TCT GAA AAC ATG GTG ATT CCC ACA GTG GTT GAT GGT GGA GAT TCA CAA ATT TCA GTC GTT 1304
 196 D Y P G S E N M V I P T V V D G G D S Q P I S V V 220

FIG. 20A

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099
1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	

11305 221	GAT GAA GAC ACT TAT TAT CAA TGG CAG GGT AAA AAG ACT TCT GCT CAG TAC TAT ATT AAC AAC GCC GGT GTA TCT	1379 245
11380 246	GCA GAA GAT GGG TGC ATTT TGG GGT ACT TCTT GGT TCG GAT GTC GGC AAC TGG GCT CCA CTA GTG TTA GGT GCT GGT	1454 270
11455 271	TCC ACT AAT GGA ACA TAC TTG TCG TTG ATT CCA AAC CCC AAC AGT AAC CAA GCT GCC AAC TTT AAC GTT AAA	1529 295
1530 296	ATA GTT GCA TCC GAT GGC GCT AAC GTT CAG GGC AGC TGT GCG TAT GAA GAT GGC TCT TTC ACC GGA GAT GGT TCC	1604 320
1605 321	GAT GGT TGC ACA GTT TCT GTT TTA TCT GGA TCTT GCT GAA TTIT GTT TTC TAT TAA GTCACTCTTCTTTTCGGTAAAAGA ATG	1685 1
1686 2	TCT TGT ATT TTG ATA CCC TCA ATT CCC CTIT ATT ATT CTIT TTIT CTT CCG CTC TCT ATT TAT TAT TAT ACA TTG GGA	1760 26
1761 27	TTT CGT TAT ATT TTIT CTC CTIT TCA GTT CAT TTIT ACT TCT TAA AAAGTTTCGTTGATCGCTATT ATG CTA TGG ATT CAA	1838 5
1839 6	AGA TTIT TCT TTIT CTC TCT CAA GGT GTA CTC TGC ATT ACG GTT TTC TTT AGT TCG TTTT ATT TTT TTT TTG TTA	1913 30
1914 31	ACA AGG TGT TTG TAT ACA TAT ATA TAA ATAT ATG GAA ATA TTA TAG TGTTTTTTTGTTACTTCTCGGAGTTGCAACAGAACTA	1998 5
1999 1	ACAAG ATG CCA TGC TGT TTIT TTIT TCA TTT TTT GGC TAT AAA AAT AAC AGT ATC CTA GTC CTT GTG TTC GGC TTT	2072 23
2073 24	AAA ATG GAA TTG CAA ACC CCA TAA TTCTTCTTCACACCAGAACACGCCCTAGTAGTCGATTTTCAGAGACTCTA ATG CTT TGA ATA	2160 3
2161 1	TAATTTTCTTCAAANAATTTCTTAAGCGTGTCTATCGA ATG AGT AGA CAT CAA TCA AGA GTT TCA TGG TCT CCC CGT ATT TGC	2245 15
2246 16	CGC TGC TTC TAA TATTTTGGAGTGTAGCATAGCCCCAATCAATCTTCGATA ATG CCA CTT TTIT ACA TAT ACA CGA CGA CAA	2331 10
2332 11	CCC ACA GTA GTA ACA CTC ATG ACT AAA TTIT TCA TCA GTA CTT AAT GTC ATG TAA GGG GCT AAC GAA ATC AAT GCA	2406 35
2407 36	ATG GGC GTT TCT CTA TAA ACG ATG ATA TGC GTA TTG TTC ACC ACT GGA TCC	2457 10

FIG. 20B

FIG. 21A

1265	ATT	TCT	ATT	GAC	TGG	ATT	GGC	GAG	GGT	GGA	TGG	TCC	GGT	GTG	GAA	AAC	ACC	GAC	ACT	TCC	ACT	GGC	GGT	TCA	TGC	1339
235	I	S	I	D	W	I	G	E	G	G	W	S	G	V	E	N	T	D	T	S	T	G	G	S	C	259
1340	AAG	GAG	GGG	TCC	TAC	TGT	TCC	TAC	TCC	TGC	CAA	CCA	GGT	ATG	TCT	AAG	ACC	CAA	TGG	CCA	TCC	GAT	CAA	CCA	TCT	1414
260	K	E	G	S	Y	C	S	Y	S	C	Q	P	G	M	S	K	T	Q	W	P	S	D	Q	P	S	284
1415	GAC	GGT	AGA	TCT	GTC	GGG	GGT	TTG	TTG	TGT	AAA	AAT	GGT	TAT	TTG	TAC	CGT	TCT	AAC	ACT	GAC	GCG	GAT	TAC	TTA	1489
285	D	G	R	S	V	G	G	L	L	C	K	N	G	Y	L	Y	R	S	N	T	D	A	D	Y	L	309
1490	TGT	GAA	TGG	GGT	GTC	GAG	GCT	GCC	TAT	GTT	GTT	TCT	AAA	CTA	AGC	AAG	GGT	GTC	GCC	ATT	TGC	AGA	ACC	GAC	TAC	1564
310	C	E	W	G	V	E	A	A	Y	V	V	S	K	L	S	K	G	V	A	I	C	R	T	D	Y	334
1565	CCG	GGC	ACT	GAA	AAC	ATG	GTT	ATC	CCA	ACC	TAT	GTT	GAA	GGG	GGT	AGC	TCT	TTG	CCA	TTG	ACC	GTT	GTT	GAC	CAA	1639
335	P	G	T	E	N	M	V	I	P	T	Y	V	E	G	S	S	S	L	P	L	T	V	V	D	Q	359
1640	GAT	ACT	TAC	TTT	ACT	TGG	GAA	GGC	AAA	AAG	ACA	TCT	GCT	CAA	TAC	TAC	GTT	AAT	AAC	GCC	GGC	GTC	TCA	GTT	GAA	1714
360	D	T	Y	F	T	W	E	G	K	K	T	S	A	Q	Y	Y	N	N	A	G	V	S	V	E	384	
1715	GAT	GGG	TGT	ATC	TGG	GGT	ACT	TCT	GGA	TCT	GGT	ATT	GGT	AAC	TGG	GCA	CCA	TTA	AAC	TTT	GGT	GCT	GGC	TCC	ACT	1789
385	D	G	C	I	W	G	T	S	G	S	G	I	G	N	W	A	P	L	N	F	G	A	G	S	T	409
1790	GGT	GGA	GTG	ACA	TAC	TTA	TCA	TTG	ATT	CCT	AAC	CCA	AAC	AAC	AGC	GAC	GCA	TTG	AAC	TAC	AAC	GTC	AAG	ATA	GTT	1864
410	G	G	V	T	Y	L	S	L	I	P	N	P	N	N	S	D	A	L	N	Y	N	V	K	I	V	434
1865	GCT	GCT	GAT	GAT	TCA	TCC	AAT	GTC	ATC	GGT	GAA	TGT	GTT	TAC	GAA	AAT	GGT	GAG	TTC	TCT	GGC	GGT	GCT	GAC	GGG	1939
435	A	A	D	S	N	S	N	V	I	G	E	C	V	Y	E	N	G	E	F	S	G	G	A	D	G	459
1940	TGT	ACC	GTC	TCT	GTT	ACT	TCC	GGT	AAA	GCT	CAAT	TTT	GTC	TTA	TAC	AAT	TAA	GCTACGTGACTACTACTTTTCCCTTTTTTTT								2022
460	C	T	V	S	V	T	S	G	K	A	H	F	V	L	Y	N	*									476
2023	C	TTTTTT	CGAACACATCTCACC	CCCCCTATACCTC	ACACAAATCACT	ATG	GTC	CCC	TTT	TCT	TTT	TAC	CGA	TAT	TTA	TAC	TGT	CCA	CCT							2108
1																									14	
2109	T	TTT	TCT	TTT	CGT	TAA	TGGCCTCA	ATG	TTT	CTG	TAC	CAT	TAT	C												2150
15	F	S	F	R	*			M	F	L	Y	H	Y													6

FIG. 21B

Pile.1 (Nca3)	1	50
Pile.1 (Uth1)	MCFLLETAS	PRSKLSKDFK PQFTLLSSVT KKKKKKVRPH NFQCIHSLNF
Pile.1 (Sag1)	.....	.....
Consensus	-----	-----
Pile.1 (Nca3)	51	100
Pile.1 (Uth1)	VYFLFIHSFL	FEYNQLLVLP LNKNLPSLNF SRNSSMKLSA LLALS
Pile.1 (Sag1)	.....	.....MKISA ALILSSLSSV
Consensus	-----	-----MKFST AVT'TLSSG
Pile.1 (Nca3)	101	150
Pile.1 (Uth1)	AFSAPAPAPA	DSHHEDIIHKD EKPAV.....V TVTQYID
Pile.1 (Sag1)	ASTAVLAAPA	VHSDNHHHN DKRAV.....V TVTQYVNADG
Consensus	AIVSALPIVD	VHQEDAHQH. .KRAVAYKYV YETVVVDSGDG HTVT'PAASEV
	A-----	-----H--- -K-AV---V --T-----
Pile.1 (Nca3)	151	200
Pile.1 (Uth1)	.....	.....SN AATSTVES.A ATT'TL
Pile.1 (Sag1)	ATAATSAIIT	TATSA AADGKVESVA AAT'TLSSTA AAAT'TSAAAS
Consensus	-----	-----S- AA-----S-A -----L-----
Pile.1 (Nca3)	201	250
Pile.1 (Uth1)	....SSSEKD	TSEQKRDGGF QDGTVKC
Pile.1 (Sag1)	SSSSSSSSSS	SSSSVSGGDF EDGTISC
Consensus	ASTSQGASSS	SSSSSATSTL ESSSVSSSSE EAAPT'TVVS TSSATQSSAS
	-----	-----S-----

FIG. 22A

Pile.1 (Nca3)	251	.....	SDFPSV	NGIVSLDWLG	FGGWASVMDM	DANTSSECKD	300
Pile.1 (Uth1)		.....	SDFPSG	QGAVSLDWLG	IAGWASIMDM	NGNTATSCQD	
Pile.1 (Sag1)		SATKSSTST	SPSTSTSTST	SS'TSSSSSSS	SSSSSSSNT	DTSTGGSCKE	
Consensus		-----	---S---	-----S-	-----S-	---T---C-	
	301						
Pile.1 (Nca3)		GYCYCYACIEP	GMSKTQWPSD	QPSDGKSVGG	LYCKNGLYR	TNTDTSDLCS	350
Pile.1 (Uth1)		GYCYCYACSP	GYAKTQWPSE	QPSDGRSVGG	LYCKNGKLYR	SN'TD'TNSLCV	
Pile.1 (Sag1)		GSYCSYSCQP	GMSKTQWPSD	QPSDGRSVGG	LLCKNGLYR	SN'TDADYCLE	
Consensus		G-YCSY-C-P	G--KTQWPS-	QPSDG-SVGG	L-CKNG-LYR	-N'TD---LC-	
	351						
Pile.1 (Nca3)	351	TDE'TSAKAIN	KKSDSIALCR	TDYPGSENMV	IPTVVDDGDS	QPISVVDEDT	400
Pile.1 (Uth1)		EGOGSAOAVN	KVSGSIAICG	TDYPGSENMV	VPTVVVGAGSS	QPINVIKEDS	
Pile.1 (Sag1)		WGEAAAYVVS	KLKGVVVAICR	TDYPGTENMV	IPTYVEGGSS	LPLTVVDODT	
Consensus		-----A----	K-S---A-C-	TDYPG-ENMV	-PT-V--G-S	-P--V---D-	
	401						
Pile.1 (Nca3)		YYQWQKKTS	AQYYINNAGV	SAEDGCIWGT	SGSDVGNWAP	LVLGAGS'ING	450
Pile.1 (Uth1)		YYQWQKKTS	AQYYVNNAGV	SVEDGCIWGT	EGSGVGNWAP	VVLGAGYTDG	
Pile.1 (Sag1)		YFTWEGKKTS	AQYYVNNPGV	SVEDGCIWGT	SGSGIGNWAP	LNFGAAS'TGG	
Consensus		Y--W-GKKTS	AQYY-NN-GV	S-EDGCIWGT	-GS--GNWAP	---GA--T'-G	

FIG. 22B

```

Pile.1 (Nca3)
Pile.1 (Uth1)
Pile.1 (Sag1)
Consensus
Sun4
451
ETVLSLIPNP NSNQANFNV KIVASDG.AN VQGSCAYEDG SFTGDGSDGC 500
ITVLSLIPNP NNKEAPNFI KIVAT'DG.ST' VNGACSYENG VYSGSGSDGC
VTVLSLIPNP NNSDALNPNV KIVAADDSSN VIGECVYENG EFSG.GADGC
-TVLS-IPNP N---A-N-N- KIVA-D---- V-G-C-YE-G ---G-G-DGC
....SLIPNP NNGNALNPNV KIVAADDSSST VNGECIYENG SFSSGSGSDGC

Pile.1 (Nca3)
Pile.1 (Uth1)
Pile.1 (Sag1)
Consensus
Sun4
501
TVSVLSGSAE FVFYZ 515
TVSVTSGSAN FVFYZ
TVSVTSGKAH FVLN
TVSV-SG-A- FV-Y-
TVSVTAGKAK FVLY.
```

FIG. 22C

EIGHT REPEATS IN UTH4

193	L a t D q F G c r F L Q K k L E
231	L i l D p F G n y L V d K i c D
267	I s i n q Y G t r s L Q K i I D
310	L i n D I n G n h V I Q K c I f
348	I s t H k h G c c V L Q K i L s
384	L i n D q F G n y I I Q f i L D
422	L s c l k F s s n V V e K f I K
487	L i r D n F G n y A L Q t I L D



HYDROPHOBIC



CHARGED

FIG. 23

2

3

5

6

7

8

FIG. 24